Datacard®

User's Guide for Express™ and Select™ Class Printers

ImageCard® and UltraGrafix® Series

June 2000

Part No. 526945-001

Please note and heed the WARNING and CAUTION labels that have been placed on the equipment for your safety. Please do not attempt to operate or repair this equipment without adequate training.

Liability statement

This Datacard® product has been built to the high standards of Datacard Corporation. See “Safety and compliance” on page A-1 for the statement of liability.

Regulatory compliance

This Datacard product conforms to regulatory requirements as specified in North America and Europe. See “Safety and compliance” on page A-1 for detailed regulatory compliance information.

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Revision Log: User’s Guide for Express™ and Select™ Class Printers

Revision	Date	Affected Pages	Description of Changes
A	Jan. 99	All	Initial release
B	June 2000	All	Updated organization, added unpacking and part number information

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Overview

1

This chapter presents the following:

- The purpose of this manual
- Who should use this manual
- The Express or Select printer, including a description of the printer, the models available, and their components
- Specifications for the PC used with the printer and the software that runs on the PC

About this manual

This manual provides detailed information about the Datacard® Express™ or Select™ Class photo ID printer. It also explains how to install, use, and maintain the printer and its printer driver.

Audience

To perform the procedures in this manual, you must have the following skills:

- Ability to read and understand written and graphical instructions
- Ability to operate a personal computer (PC)
- Experience with Microsoft® Windows® 98 or Windows NT®
- Ability to load supplies
- Ability to perform simple troubleshooting using written and graphical instructions

Datacard-authorized service personnel also use this manual.

About the Express or Select printer

The Express or Select photo ID printer includes the printer and a printer driver which runs on a PC. The printer uses supplies such as print ribbon and blank cards when printing cards.

The Express or Select printer prints full-color or monochrome images on one or both sides of PVC cards. The images printed can include photos, text, logos, barcodes and digitized signatures. The printer can also encode data on a card's magnetic stripe and program a smart card chip on a card. (These steps are commonly called “personalizing” the card.) Magnetic stripe encoding and smart card programming are options that can be purchased as part of the printer.

The printer driver receives digital information from a card creation application and processes the data to send to the printer. When the printer receives the data, it prints the card. The driver keeps track of the progress of the card in the printer, and sends data for the next card as soon as the printer is ready and the data is available.

See “PC and software specifications” on page 1-8 for more information about the printer driver and the PC on which it runs.

Printer models

Several models of the printer are available. ImageCard printers can print full-color or monochrome images, while UltraGrafix printers can print only monochrome images. A printer can be ordered with the following optional modules:

- Magnetic stripe module, for either 3-track encoding or single-track NTT encoding. The module is installed in-line with the print operation. It encodes data on the magnetic stripe and then verifies the data.

- Smart card module. The smart card module is available with a contact coupler. The Select 2 printer is available with a contactless (RF) coupler. Both printers are available with a contact station with external coupler. A custom smart card application can use the module to initialize and program the smart card chip on a card.
- Duplex module, available on Select Class printers, which can automatically print on both sides of the card.

Table 1-1 lists the models and their features.

Table 1-1: Express or Select printer features available

Model name	Colors printed	Duplex module	Magnetic stripe#	Smart Card#
ImageCard E	Full color or monochrome	No	Yes# †	Yes# †
ImageCard S	Full color or monochrome	No	Yes#	No
ImageCard S2	Full color or monochrome	Yes	Yes#	Yes#
UltraGrafix E	Monochrome only	No	Yes# †	Yes# †
UltraGrafix S	Monochrome only	No	Yes#	No
UltraGrafix S2	Monochrome only	Yes	Yes#	Yes#

#. Optional
†. Only one option--either magnetic stripe or smart card--can be installed in a printer.

Monochrome printing uses a ribbon with a single color, such as black. To optimize monochrome printing, use a monochrome printhead cartridge.

An existing printer cannot have options added; options must be factory-installed.

Figure 1-2 shows the E and S models of the Express or Select printer. The ImageCard and UltraGrafix printers have the same appearance.

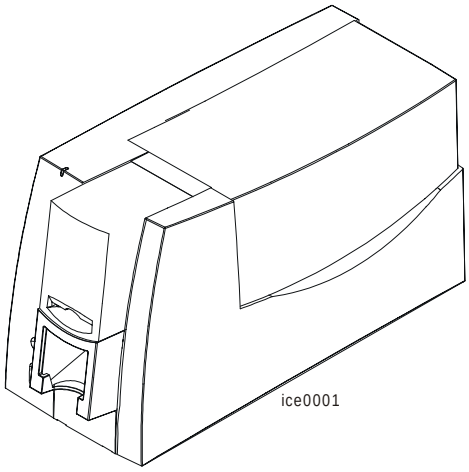

Figure 1-2: E and S models of the Express or Select printer

Figure 1-3 shows the S2 model of the Express or Select printer. The ImageCard and UltraGrafix printers have the same appearance.

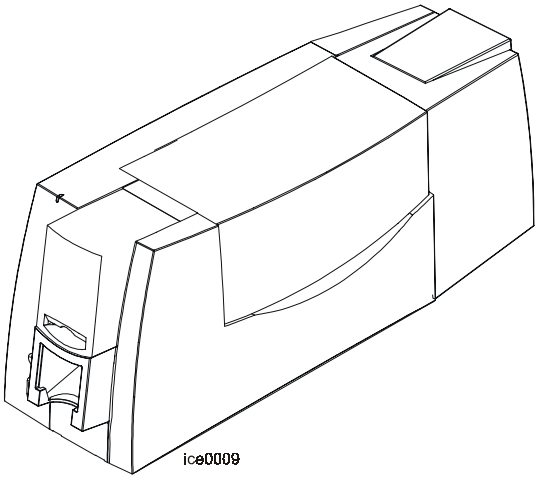

Figure 1-3: S2 model of the Select Printer

Printer features

Use the information in this section to identify the features and controls you use on the printer.

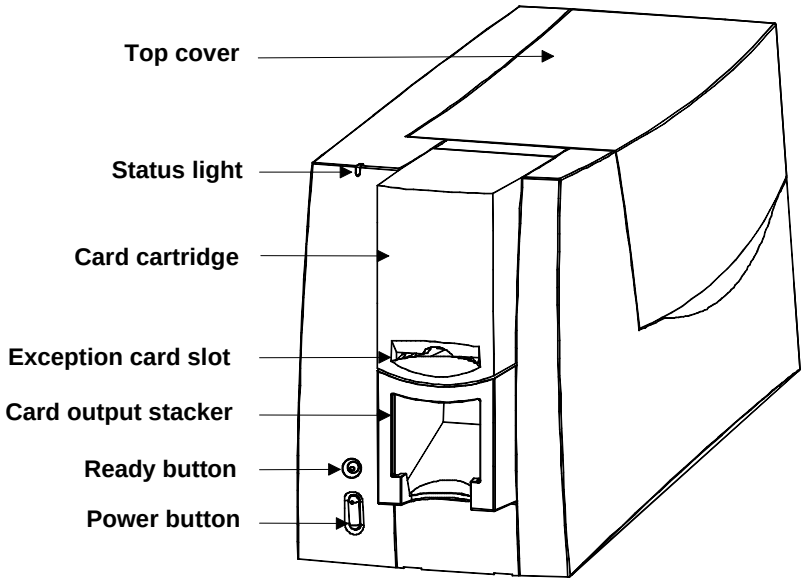

Figure 1-4: Front of the Express or Select printer

Front of the printer

Find the following on the outside of the printer:

Top cover

The cover protects the internal parts of the printer from dust and debris. It also lessens the sound from the printer.

Status light

The status light indicates that the printer is processing data, ready to receive data, or in an error condition.

- When the status light is steady green, the printer is on and ready to print cards.
- When the status light blinks green, the printer is receiving data from the PC, is printing, or is paused.
- When the status light blinks yellow, the printer has identified a problem and stopped.
- The status light can turn red on rare occasions. If this happens, contact your service provider promptly for assistance.

Card cartridge

The card cartridge holds blank cards to print. It holds about 100 cards (with a nominal thickness of 0.030 inches (0.76 mm)). At the bottom of the card cartridge, the exception card slot allows you to insert a single card that is different from the cards in the card cartridge.

Card output stacker

The card output stacker holds the cards after they have been processed. Both completed cards and rejected cards go to the card output stacker.

Ready button

The Ready button allows you to pause the printer while printing a card, to clear an error condition, to cancel a print job and delete all data for the job, or to create a printer test card.

- To pause the printer, press and hold the Ready button for three seconds or less. Any cards being printed complete the current operation and stop. The status light continues to blink green while the printer is paused. Press the Ready button to resume printing.

If the printer is paused and a message box is displayed on the PC, use the buttons on the message box to clear the message. If you press the Ready button to clear the error, the current print job is cancelled. If you press the Ready button to clear a pause condition, the job is not cancelled.

- To cancel and clear the current print job, press and hold the Ready button for between three and ten seconds. When the sound changes tone, release the Ready button. The job is cleared from printer memory and the card is ejected.
- You can verify that the printer is working correctly by making a printer test card. See “Making and evaluating test cards” on page 2-15 for more information.

Power button

Use the Power button to power on or power off the printer.

Inside the printer

Open the cover to find the following on the inside of the printer.

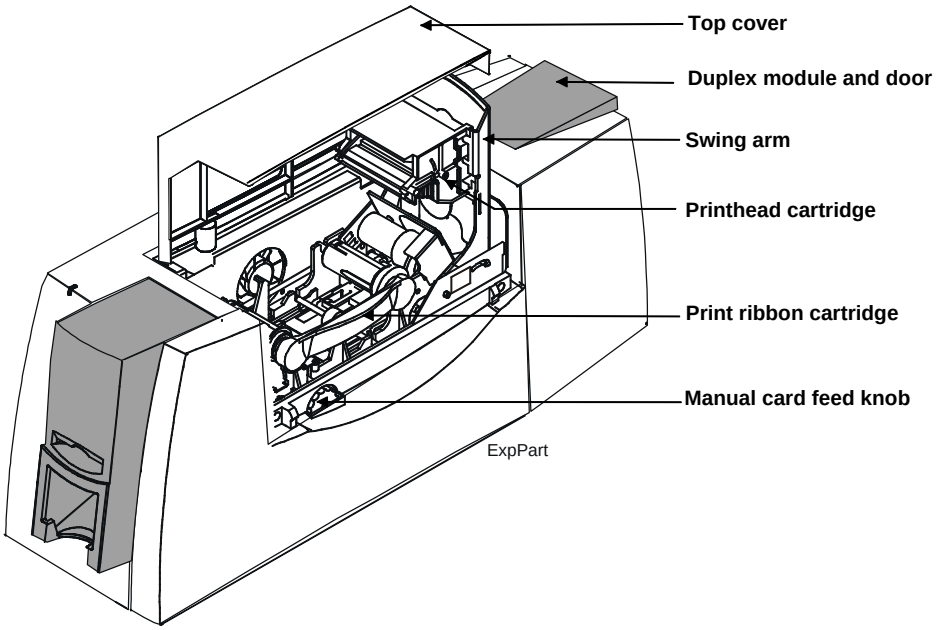

Figure 1-5: Internal parts of the Express or Select printer

Duplex module and door

On the S2 printer model, this area contains the duplex mechanism, which turns the card over for printing on both sides.

Swing arm

The swing arm opens to give you access to the printhead cartridge and print ribbon cartridge. Push down on the left (curved) end of the swing arm to open it.

Printhead cartridge

The printhead, contained in the printhead cartridge, uses heat and pressure to transfer dye and other material from the print ribbon to the card. The printhead cartridge is replaceable.

Print ribbon cartridge

The print ribbon cartridge holds the print ribbon.

Manual card feed knob

The manual card feed knob turns to move a card along the card transport track. Use it to release stuck cards in the print module.

Back of the printer

Figure 1-6 shows the back of the Express or Select Class printer:

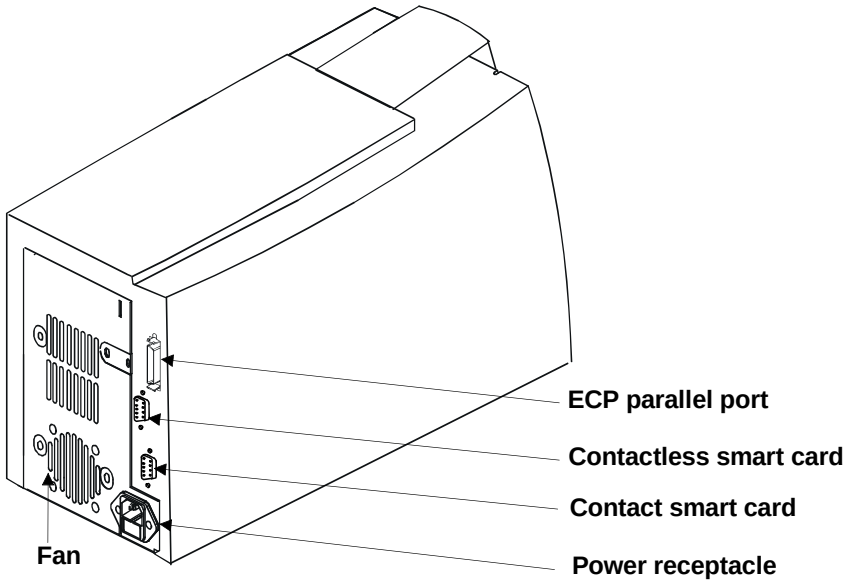

Figure 1-6: The back of the Express or Select printer

Find the following on the back of the printer:

ECP parallel port

Use the ECP parallel port to connect the printer's interface cable to the PC.

Power receptacle

This is the receptacle for connecting the power cable.

Smart card serial port(s)

On printers equipped with the smart card option, use these connectors for the serial cable from the PC or contact station that carries the data to encode on the smart card chip.

PC and software specifications

The Express or Select printer must be used with a PC that runs the printer driver. The PC also runs a card creation application that captures and organizes the data to appear on each card.

To support the printing speed that the Express or Select printer can deliver, the PC must meet the following requirements:

- Have a 233 MHz (or faster) Pentium MMX-, Pentium II- or Pentium III -compatible processor

The PC resources, including processor speed, memory, and available hard disk space, can have a dramatic effect on card processing speed. For faster card printing, use a 450 MHz or faster processor with 128 MB of RAM.

- Have an enabled ECP parallel port
- Have at least 64 MB of memory (RAM)
- Have a diskette drive to install the printer driver
- Have 50 MB or more of hard disk space available to store the printer driver and provide working space for preparing card data
- Have one of the following operating systems:
  - Windows 95 or 98
  - Windows NT 4.0 with service pack 4 or higher

The PC must also have a card creation application that formats and prepares the card data. For the PC requirements of your card creation application, see the application's documentation.

Getting started

2

This section describes how to install and set up the Datacard® Express™ or Select™ Class photo ID printer. It describes:

- General requirements for using the printer
- Selecting the site
- Unpacking the printer
- Who to call for assistance
- Connecting the cables
- Loading supplies, including cards, and print ribbon
- Powering on the printer
- Installing the printer driver
- Printing test cards

General requirements

When choosing a site for the Express or Select printer and its supplies, consider the following general requirements:

- Keep all dust, dirt, food, liquids, etc. away from the Express or Select printer at all times.
- Keep the top cover closed at all times, except when changing supplies, fixing problems, or performing maintenance.
- Do not use supplies or cards that have been dropped on the floor or have otherwise become contaminated.
- Keep paper and foreign materials off the Express or Select printer.
- Do not block the back air vents or fan opening on the Express or Select printer.
- Place the Express or Select printer on a stable platform; keep it off the floor.
- Place the Express or Select printer away from direct sunlight.
- Place the Express or Select printer away from heating ducts, blowers, or other air vents.
- Do not use the Express or Select printer for purposes other than its intended use.
- When cleaning around the Express or Select printer, prevent debris from entering the printer.

- Place the Express or Select printer in a clean office environment, protected from any type of construction.
- Store all supplies (ribbons, cards, etc.) in the original packaging until loaded in the cartridges. Keep the original packaging closed.
- Store all supplies in a clean, cool, dry location. See “Supply roll storage” on page B-2 for information about the storage environment for Express or Select supplies.

Selecting the site

After meeting general requirements, the site for the Express or Select printer should meet the electrical, physical, and environmental requirements of the printer. Finally, be sure to select an appropriate site for printer supplies.

Electrical requirements

The Express or Select printer requires the following electrical conditions for optimal performance:

- 90-254 VAC at 50/60 Hz (The Express or Select printer automatically adjusts to any power within this range.)
- Single phase, 3-wire grounded receptacle only

The maximum input current for the Express or Select printer is 1.4 amps at 100 VAC applied.

Physical requirements

The Express or Select printer requires an environment that accommodates its physical dimensions and weight.

The printer weighs between 21 and 26.5 pounds or 9.7 and 11.9 kilograms.

The surface holding the printer might also need to bear the weight of other equipment such as a PC and camera.

The dimensions are:

- Width of 17.8 inches (54.1 cm) for E and S models
- Width of 24 inches (65 cm) for S2 models
- Depth of 8.8 inches (22.2 cm)
- Height of 10 inches (25.4 cm)

Environmental requirements

The Express or Select printer requires the following environmental conditions for optimal operation:

- Operating relative humidity: 20% to 80% non-condensing
- Operating temperature range: 55° F to 80° F (13° C to 27° C)

If you store the Express or Select printer, provide an environment with the following conditions:

- Storage relative humidity: 20% to 80% non-condensing
- Storage temperature range: 0° F to 100° F (-17.8° C to 37.8° C)

Unpacking the printer

Follow these steps to unpack the printer. Be sure to select a location that meets the site requirements for the Express or Select printer. See “Selecting the site” on page 2-2 for more information.

You need scissors or another cutting device to unpack the printer.

Make sure you have one or more people to assist with unpacking the printer. One or two people can lift the printer while another person assists with removing packaging.

Unpack the printer

1 Place the shipping carton on a firm level surface.

2 Use a scissors to open the taped area on top of the shipping carton.

3 Open the shipping carton (step 1 in Figure 2-1).

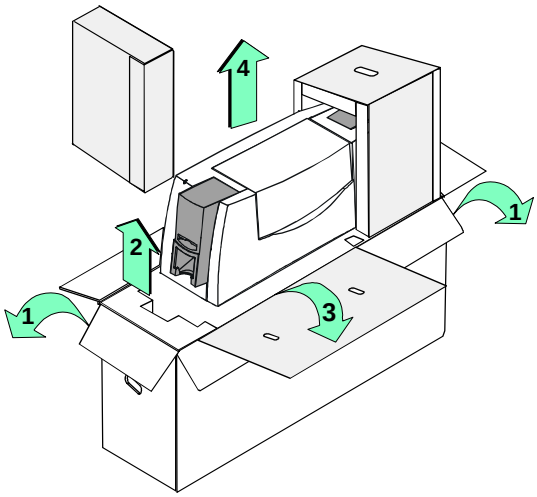

Figure 2-1: Unpack the printer

4 Remove the accessories box (step 2 in Figure 2-1).

5 Open the top of the packing material (step 3 in Figure 2-1).

⚠ The printer weighs 21 to 26 pounds (9.7 to 11.9 kg). Use proper lifting techniques. Make sure you have enough people to lift the printer comfortably.

6 Lift the printer from the carton (step 4 in Figure 2-1) and place it on a counter or other solid surface.

7 If the end of the packing material comes out of the box, slide it off the end of the printer and place the entire printer on a counter or other solid surface.

ⓘ Save all packing material, including the plastic bag, shipping carton, shipping cushions, and accessories box.

8 Open the accessories box and remove the contents. The accessories box contains:

- Power cable
- Interface cable
- Warranty and declaration of conformity
- User's Guide
- Printer driver
- Supplies kit if one was ordered with this printer

9 Make sure the card cartridge is securely seated in the printer. If needed, move it gently to seat it.

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Who to call for assistance

If you work with a Datacard-authorized distributor or value-added reseller, contact your reseller for assistance. A value-added reseller provides the Express or Select printer as part of an overall system.

If any contents of the box are missing, contact your distributor or reseller. If you purchased your printer directly from Datacard, contact Datacard. Make sure you have the serial number, located on the bottom of the printer, when you call.

Connecting the printer

This section explains how to connect the printer to a power source and to the PC that runs the printer driver. It also explains how to connect the optional smart card cable.

Connect the printer

1 Attach the interface cable to the ECP parallel port on the PC. Attach the other end of the interface cable to the printer (step 1 in Figure 2-2).

The interface cable must be a shielded, Type C, IEEE 1284 parallel port cable, up to a maximum of 2 meters long.

If the PC has more than one parallel port, make sure you use the ECP capable parallel port on the PC. Also, note whether the port is LPT1 or LPT2, so you can specify the port when installing the printer driver.

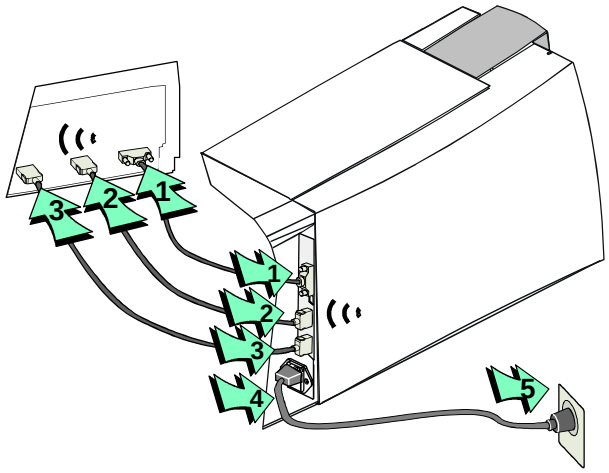

Figure 2-2: Connect the printer cables

2 If your printer has a smart card module, the ports to use correspond to the module installed:

- The lower port (step 3 in Figure 2-2) is for a contact smart card module or a contact station.
- The upper port (step 2 in Figure 2-2) is for a contactless module.
- Both ports are installed for a module containing both contactless (upper port) and contact couplers (lower port).

If the printer includes a smart card module, the printer's smart card serial port is connected to the PC using a smart card serial cable. The cable must be a shielded DB9 serial cable, up to a maximum of 3 meters long.

If the PC has more than one serial port, attach the serial cable to the serial port for the smart card application. See information with your smart card application for the correct port to use.

Verify that serial port settings are correct using the steps in "PC settings" on page C-1.

3 Attach the power cord to the power receptacle on the back of the printer (step 4 in Figure 2-2).

4 Plug the other end of the power cord into a single phase, 3-wire grounded receptacle with 90-130V AC or 195-254V AC at 50 or 60 Hz (step 5 in Figure 2-2).

The printer power supply automatically adjusts to the voltage of the input power.

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Loading cards

Load cards when beginning work or when the card cartridge is low on cards or empty. You can load cards when the printer power is on or off. You can also load cards while the printer is printing.

To order more cards, contact your card vendor. For information on card requirements, see “Supplies and cards” on page B-1.

Load cards

1 Lift the card cartridge up and out of the card cartridge cavity.

Pull up on the lower, rounded edge of the card cartridge to release the card cartridge.

2 Fan cards (see Figure 2-3). Do not touch the surface of the cards.

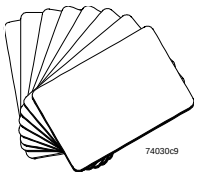

Figure 2-3: Fan cards

3 Place up to 100 blank cards into the card cartridge. Do not touch the surface of the cards.

For magnetic stripe cards, the magnetic stripe faces down and is positioned toward the front of the printer (see Figure 2-4). If your card design requires a different orientation, position the magnetic stripe up and toward the front of the printer.

For smart cards, position the card so the chip is up and toward the right side of the printer.

If your cards are thicker or thinner than 0.030 inch (0.76 mm), the maximum number of cards you can load varies.

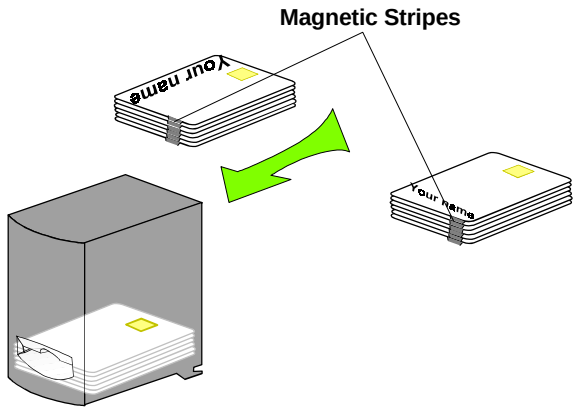

Figure 2-4: Load cards into the card cartridge

4 Replace the card cartridge into the card cartridge cavity. Push the bottom of the card cartridge toward the printer until it clicks into place (see Figure 2-5.).

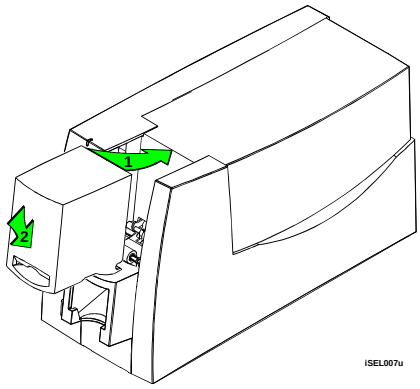

Figure 2-5: Replace the card cartridge

Loading the print ribbon

The printer uses print ribbon with color panels, continuous color, or color and topcoat. To order new ribbon, contact your service provider. See “Supplies and cards” on page B-1 for ordering information.

Remove the print ribbon cartridge

1 Lift the top cover, as shown in Figure 2-6.

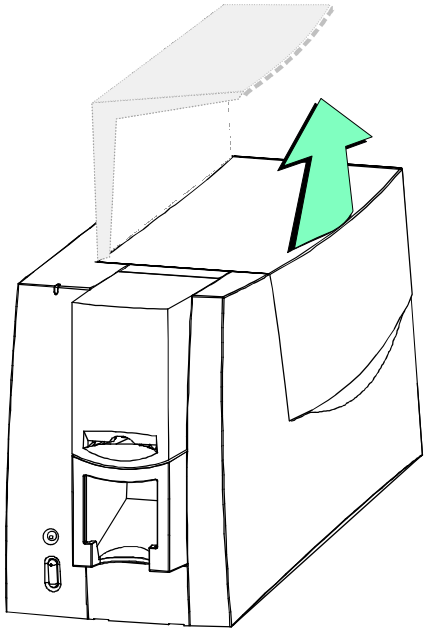

Figure 2-6: Open the cover

2 Press down on the swing arm (see Figure 2-7). The push latch releases the swing arm. Lift the swing arm until it is fully open.

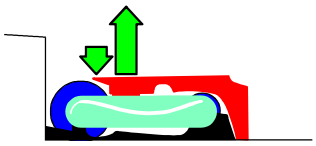

Figure 2-7: Open the swing arm

3 Grasp the ribbon cartridge handle, and lift up to remove the print ribbon cartridge (see Figure 2-8).

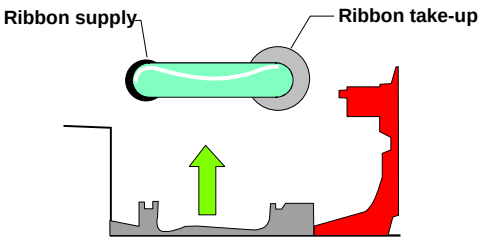

Figure 2-8: Remove the print ribbon cartridge

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Load the print ribbon

1 If used print ribbon is in the printer, remove the used ribbon and used ribbon spool from the ribbon cartridge shafts.

The print ribbon has a negative image of the information printed on the card. Dispose of print ribbon according to your policy for protecting the data that might be visible on it.

2 Unwrap the new print ribbon.

3 Slide the full supply roll onto the left ribbon cartridge shaft (see Figure 2-9).

4 Slide the empty take-up ribbon spool onto the right ribbon cartridge shaft. Leave very little slack in the ribbon between the ribbon cartridge shafts (see Figure 2-9).

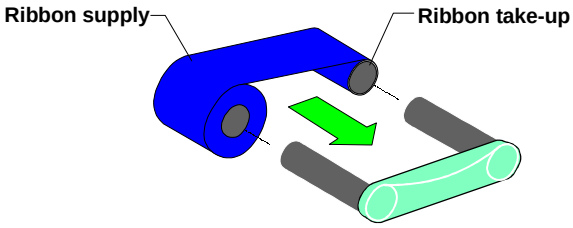


Figure 2-9: Load new print ribbon on the ribbon cartridge

♦

Replace the print ribbon cartridge

1 Place the ribbon cartridge onto the ribbon cartridge supports, and press down until it clicks into place (see Figure 2-10).

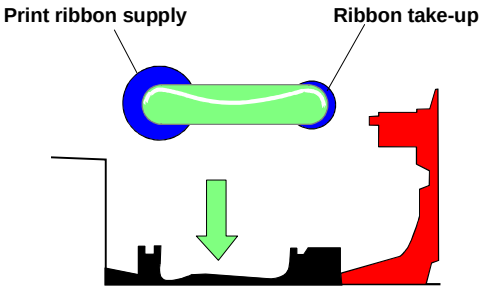


Figure 2-10: Replace the print ribbon cartridge

2 Close the swing arm, pressing it down until the push latch clicks into place.

3 Close the cover.

4 If you are installing the print ribbon for the first time be sure to print a printer test card after installing the printer driver. (See “Making and evaluating test cards” on page 2-15 for more information.)

Set the print ribbon type or select autodetect. See “Working with printer settings and data” on page 3-1 for steps to follow.

♦

Powering on the system

Before installing the printer driver and before using the printer, follow these steps to power on the printer.

Power on the printer

1 Make sure cards and all other supplies are loaded. See other sections of this chapter for more information.

2 Remove any printed or rejected cards from the output stacker. See “Removing cards” on page 3-9 for more information.

3 Make sure the power cord and interface cable are connected. If needed, see “Connecting the printer” on page 2-4 for more information.

4 Press the printer Power button to turn on power. Observe the printer panel light. See “Printer features” on page 1-4 for more information. The printer initializes all components and makes audible sounds.

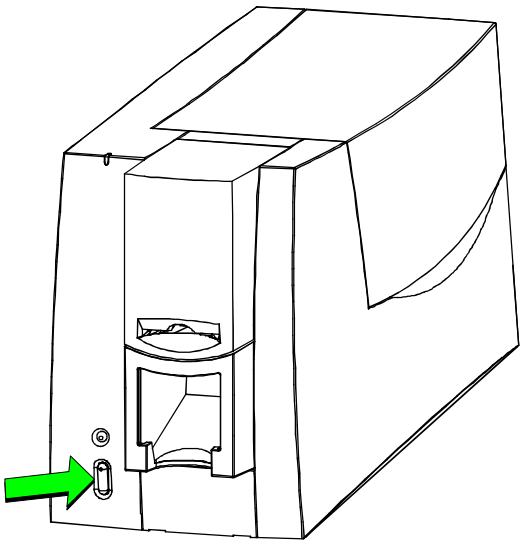


Figure 2-11: Turn on power to the printer

5 Press the PC Power button to turn on the power to the PC. Turn on power to any other equipment needed.

The PC can be powered on before the printer; however, you should wait a few minutes for the PC to obtain information from the printer. The PC power can also remain on if the printer is powered off.

♦

Installing the printer driver

The Express or Select printer comes with different printer drivers for the Microsoft Windows 95/98 and Windows NT operating systems. The printer driver is shipped with the printer on diskettes.

If you have installed an Express or Select class driver and want to update to the most recent printer driver, see “Reinstalling the printer driver” on page 5-1.

Installing the Windows 95/98 printer driver

To install a second printer driver of the same class on a PC running Windows 95/98, see “Installing two printers (Windows 95/98)” on page 5-5. (You cannot install a second printer driver on a PC running Windows NT.) Do not install two printer drivers unless you have connected two printers to the PC.

Install the printer driver on Windows 95/98

A PC running Windows 95/98 automatically detects new hardware at PC power on. If you power off the PC, attach the printer and power it on, and then power the PC back on, the PC displays a message asking if you want to install the new printer. Begin with step 6 below.

1 Make sure the printer is connected to the PC and powered on.

2 Close all applications. Do not close Windows.

3 Insert the first Windows 95/98 printer driver diskette into the disk drive of the PC.

4 Select Settings and then Printers from the Windows Start menu. The Printers window appears.

5 In the Printers window, double-click on the Add Printer icon.

6 When the Manufacturers list appears, select the Have Disk button. If needed, click on the Browse button to select the printer driver diskette location.

7 Select the port to which you have connected the printer.

8 In the Printer Name box, use the default name or change the printer name to match the name on the front of your printer. For example, you might change “Datacard Select Class” to “ImageCard S2” or “UltraGrafix S”. Do not use the <>:"/\ and | characters in the name.

9 Remove the diskette and insert the next diskette when prompted.

- A Version Conflict dialog might appear as the installer copies files. Select Yes to keep the existing files on your PC.
- A Code Page Mismatch dialog might appear. Select Yes to keep the existing files on your PC.

10 Remove the last diskette. A message will appear that prompts you to restart Windows: Follow the prompt.

11 If a message prompts you to run the firmware update utility, follow the prompt. Do NOT power off the printer while running the firmware update utility.

12 After installing the printer driver, there are several other tasks you might need to perform. They are:

- Select whether to print on two sides (duplex printing).
- Select the ribbon type before printing a test card. See “Working with printer settings and data” on page 3-1 for steps to follow.
- If you use a print ribbon with a topcoat (T) panel, select the topcoat pattern for the front of the card, the back of the card, or both.
- If the printer has a magnetic stripe module, select the magnetic stripe coercivity and encoding format. See “Working with printer settings and data” on page 3-1 for steps to follow.

ⓘ The card creation application might send settings with cards which override the settings you make in the Properties dialog box.

13 Print a Windows test page to verify that the printer and driver are working. See “Print the Windows test page” on page 2-17 for more information.

♦

Installing the printer driver on Windows NT

Use the following steps to install the printer driver on PCs running Windows NT.

ⓘ If you move the printer from a PC running Windows 95/98 to a PC running Windows NT 4.0, use the printer Properties dialog box on Windows 95/98 to set “Always autodetect” before moving the printer.

ⓘ One Express, Select, or Magna Class, or ImageCard IV printer can be installed on the PC at a time. If you have a printer driver for Datacard printer installed on this PC, see “Reinstalling the printer driver” on page 5-1 for steps to follow.

Install the printer driver on Windows NT

ⓘ Use the Express or Select printer driver for Windows NT only with a PC that runs Windows NT 4.0 with Service Pack 3 or higher. The printer driver is not supported for PCs with Alpha, MIPS, or PowerPC processors.

1 Make sure the printer is connected to the PC and powered on.

2 Be sure you are logged in to the Windows NT system as the administrator before starting this procedure.

3 Close all open applications. Do not close Windows NT.

4 Insert the first Windows NT printer driver diskette into the disk drive of the PC.

5 Select Settings and then Printers from the Start menu.

6 In the Printers window, double-click on the Add Printer icon. (Only the administrator can use this icon to install the printer driver on the PC.)

7 Select the “My computer” choice, and not the “Network” choice. If the “My computer” choice is not available, make sure you have logged on as the administrator.

8 Select the port to which you have connected the printer.

– Do not select the “Enable printer pooling” choice when installing the printer driver.

9 When the Manufacturers list appears, select the Have Disk button. If needed, select the Browse button to specify the location of the printer driver diskette.

10 Make sure the printer has a unique name on the PC. If you change the printer name, do not use the <>:"/\ and | characters in the name. The PC will not be able to enable the driver if you use those characters.

– Printer sharing is not supported by the current version of the printer driver for Express Class printers. Select Class printers can be shared.

11 Do not print a test page as part of the installation. You must select the ribbon type before printing a test page.

– A Version Conflict dialog might appear during the installation. If so, select Yes to keep the existing files on your PC.

12 Remove the current diskette and insert the next diskette when prompted.

13 Remove the diskette and restart Windows NT when prompted after the printer driver is installed.

If the “print a test page” choice remained selected, you might see messages regarding the test page at the same time as the prompt to restart Windows NT.

14 When the PC restarts, log in as the administrator again.

15 If a message appears prompting you to update the printer firmware, follow the prompt. Do NOT power off the printer while running the firmware update utility.

16 After installing the printer driver, there are several other tasks you might need to perform. They are:

a Set permissions to the printer for other users of the PC to support printing or to prevent access to the printer. See “Setting printer permissions” on page C-3.

b Select whether to print on two sides (duplex printing). See “Working with printer settings and data” on page 3-1 for steps to follow.

c Select the print ribbon type before print a test card. See “Working with printer settings and data” on page 3-1 for steps to follow.

d If you use a print ribbon with a topcoat (T) panel, select the topcoat pattern for the front of the card, the back of the card, or both. See “Working with printer settings and data” on page 3-1 for steps to follow.

e If the printer has a magnetic stripe module, select the magnetic stripe coercivity and encoding format. See “Working with printer settings and data” on page 3-1 for steps to follow.

ℹ The card creation application might send settings with cards which override the settings you make in the Document Default Properties dialog box.

f Make sure that users of the printer have permission to write files to the temp file location specified in the PC configuration. If the temp file location is not specified, the driver uses the root location for the printer driver, WINNT.

17 Print a Windows test page card from the PC to verify that the driver is installed correctly. See “Print the Windows test page” on page 2-17 for steps to follow.

ℹ If you downloaded the driver from the Internet, you can delete the folders created, such as disk1, from your hard drive after installing the driver. You can also delete the downloaded file.

♦

Setup tips

Make sure that:

- The card cartridge is in place and contains cards.
- The interface cable is connected to the parallel port of the printer and the ECP parallel port of the PC.
- If the PC has more than one parallel port, the port to which the printer is assigned is the same as the port to which it is connected.
- The parallel port is configured as an ECP parallel port in the PC’s BIOS. See “PC settings” on page C-1 for more information.
- Supplies are installed in all cartridges that you plan to use, and cartridges are loaded correctly. See “Getting started” on page 2-1 for more information.
- The printer is ready to print. The panel light on the printer should be steady green when you send a test card. See “Printer features” on page 1-4 for more information.
- Use the Windows test page, not a card from a card creation application, to verify that the printer and driver are working together.

Making and evaluating test cards

You can make two types of test cards.

- Printer test cards verify the function of the printer. You print them using controls on the printer. The appearance of the card is determined by the printer and the modules installed in it.
- The Windows test page, which you can print on a card, verifies that the PC and printer work together. You print them using the printer Properties dialog box on the PC. The appearance of the card is determined by Windows.

You can also make sample cards, using your card creation application, to test print quality and card design. Do not make sample cards until you make sure the printer and driver work properly (by making a printer test card and Windows test page).

Follow these steps to make printer test cards on both the Windows NT 4.0 and Windows 98 operating systems.

Make a Printer test card

The Express or Select printer does not need to be connected to a PC to print this card.

1 Power off the Express or Select printer.

2 Confirm that all supplies are loaded. See “Getting started” on page 2-1 if needed.

If the printer has a magnetic stripe module, the cards for a printer test card must have a magnetic stripe. If it is a three-track module, be sure to use the high coercivity blank card shipped in the supplies kit.

3 Power on the Express or Select printer (2) while pressing and holding the Ready button (1), as shown in Figure 2-12. Hold the button until the sound from the internal components stops, usually about 30 seconds.

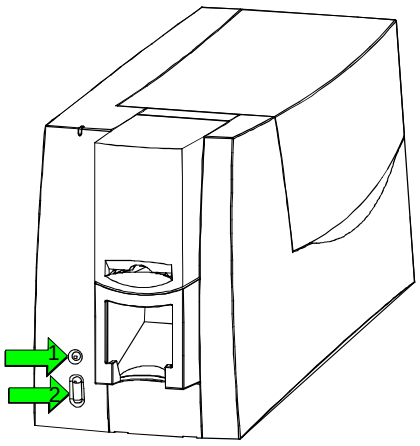


Figure 2-12: Press Power button (2) while you press and hold Ready button (1)

4 Release the Ready button. You hear a series of tones.

Allow 30 to 60 seconds for the printer to begin printing the test card. The status light will flash green while the Express or Select printer is processing the data.

5 Remove the card from the card output stacker.

The printer test card is shown in Figure 2-13 on page 2-16.

If the printer test card did not print successfully, see “Setup tips” on page 2-14. If needed, turn to “Troubleshooting” on page 6-1.

♦

Printer test card

The printer test card is designed to perform most of the functions available in the printer.

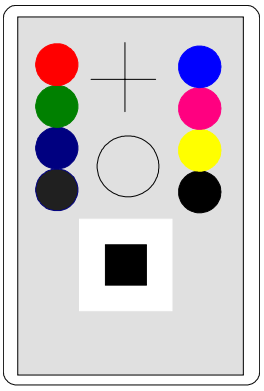


Figure 2-13: Printer test card

Check the following:

- The test card has the pattern shown on the front of the card. The back of the card is unprinted.
- If a topcoat (T) panel is included in the ribbon and you select a ribbon type that applies topcoat to the front of the card, the front of the card has topcoat applied.
- If a magnetic stripe module is installed in the printer and enabled, the following data is encoded on the card:

Track	Format	Data
Track 1	(IATA)	TEST PATTERN IATA CHARACTER SUBSET 0123456789
Track 2	(ABA)	0123456780123456789901234567 89
Track 3	(NTT)	0123456789=9876543210
Track 3	(TTS)	0123456789=9876543210

See “Magnetic stripe encoding” on page D-1 for more information about magnetic stripe tracks.

- The tracks available depend on the type of module installed.

If you are not satisfied with the appearance of the test card, see “Troubleshooting” on page 6-1 to identify the problem and possible solutions.

Follow these steps to print a Windows test page on both the Windows NT 4.0 and Windows 98 operating systems.

Print the Windows test page

The Express or Select printer must be connected to the PC with the driver installed, and both printer and PC must be running.

1 Select Start from the Windows taskbar.

2 Select Settings and then Printers from the Windows Start menu. The Printers window appears.

3 Click once on the Express or Select printer icon.

4 Select File from the Printers menu bar, and then select Properties. The Express or Select Properties dialog box appears.

5 Select the Print Test Page button on the General tab. The card should print.

6 Remove the card from the card output stacker.

The card should look similar to the cards shown in Figure 2-14 and Figure 2-15. If it does not print, see “Setup tips” on page 2-14.

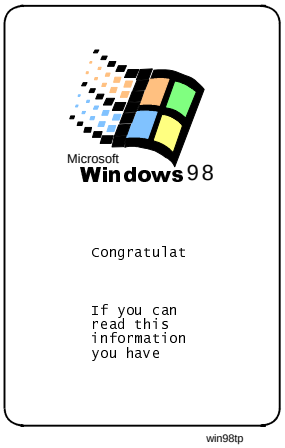


Figure 2-14: Windows test page, portrait orientation

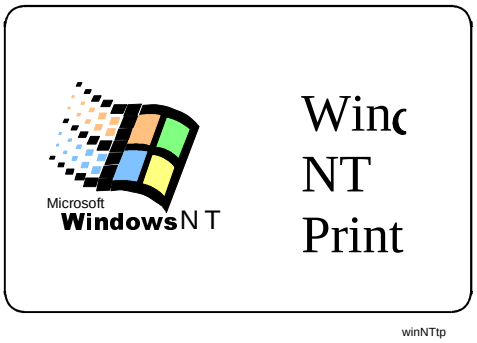


Figure 2-15: Windows test page, landscape orientation

The Windows test page has a slightly different appearance when it is printed from a network-connected client PC.

The Windows test page is generated by Microsoft Windows. The small size of the card, compared to printer paper, means that some of the text is not printed on the card.

♦

Using the printer

3

This chapter provides information to help you run the Express or Select printer effectively and efficiently. It describes:

- How to work with printer settings and data
- How to make cards
- How to remove completed cards and rejected cards
- How to respond to messages
- How to shut down the system

Working with printer settings and data

At installation, the Express or Select printer driver uses default settings for the printer. At setup, you need to view, change, and save printer and driver settings. As you use the printer, you might change the card design and need to change settings to reflect that, or you might need to view settings or data about the printer.

If you use a card creation application specifically designed to create cards, that application might include card settings that override driver settings.

Printer driver settings and data are organized differently for Windows NT and Windows 98. Use the section that applies to the operating system you use.

Settings and data for Windows NT

Settings that control the printing and personalization of the card are in the Default Document Properties dialog box for the printer. These settings include:

- Card design settings, such as landscape or portrait orientation
- Topcoat pattern during the print cycle
- Printer supplies used
- Cleaning interval
- Magnetic stripe encoding formats and coercivity

The Default Document Properties dialog box also provides access to the About dialog box, which shows the printer driver version.

Settings that control the non-printing operation of the printer are in the Properties window for the printer. These settings include:

- Port to which the printer is attached

- Permissions for other users of the PC

The Express or Select printer driver provides help for the Default Document Properties dialog box and Windows NT provides help for the Properties dialog box. Help provides information about specific settings of the Express or Select printer driver. Help does not include step-by-step procedures or detailed conceptual information.

Use the Properties dialog box

Make sure the printer power is on and the printer is connected to the PC.

1 Select Start from the Windows NT taskbar.

2 From the Windows NT Start menu, select Settings and then Printers. The Printers window appears.

3 Click once on the Express or Select printer driver icon.

4 Select File from the Printers menu bar, and then select Properties. The Express or Select Properties dialog box appears.

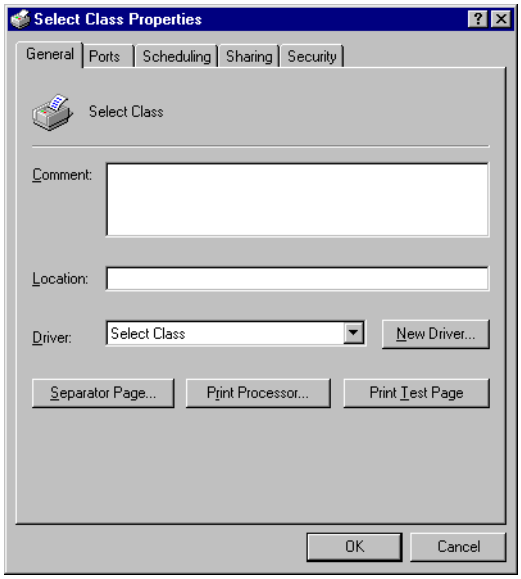


Figure 3-1: Express or Select Properties dialog box, Windows NT

5 Select the tab that contains the information you want to view or change.

6 If you make changes, click OK to save the settings and close the dialog box. If you do not want to make changes, click Cancel to close the Properties dialog box.

7 If you change the port, reboot the PC and power cycle the printer.

♦

Use the Default Document Properties dialog box

Make sure the printer power is on and the printer is connected to the PC.

1 Select Start from the Windows NT taskbar.

2 From the Windows NT Start menu, select Settings and then Printers. The Printers window appears.

3 Click once on the Express or Select printer driver icon.

4 Select File from the Printers menu bar, and then select Document Defaults. The Express or Select Default Document Properties dialog box appears.

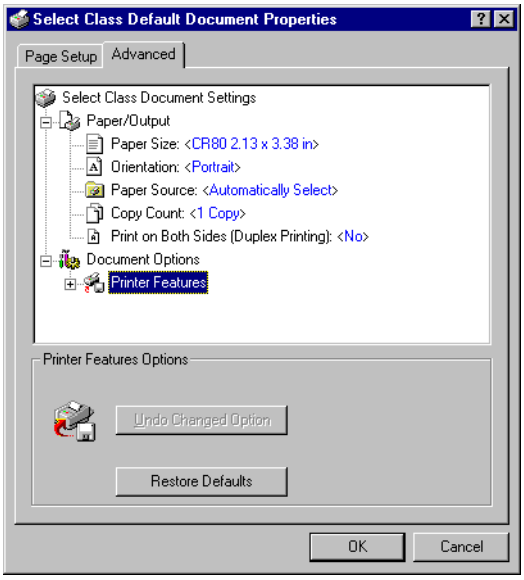


Figure 3-2: The Express or Select Default Document Properties dialog box for Windows NT

5 Select the tab that contains the information you want to view or change. On the Advanced tab, click the plus sign (+) if needed to see all selections available. When you click a selection, choices appear in the “Change . . . “ box. Click the value you want.

If the selections you want to use are not available (are grayed out), make sure the feature is available in the printer. Also make sure that the printer is powered on and connected to the PC and resume the Status Monitor. See “Opening and using the Status dialog box” on page 3-6.

To view help for settings, click on the What's This help button and then click any setting in the Printer Features list. A list of settings is displayed. Select the setting for which you want help.

6 If you make changes, or if this is the first time you have viewed the Document Default Properties dialog box, click OK to save the settings and close the dialog box.

♦

Settings and data for Windows 98

Settings that control the printing and personalization of the card include:

- Print on both sides (duplex printing)
- Card design settings, such as landscape or portrait orientation
- Topcoat pattern during the print cycle
- Printer supplies used
- Cleaning interval
- Magnetic stripe encoding formats and coercivity

Data about the printer is available, including the "About" dialog box which shows the printer driver version.

Use the Properties dialog box

Make sure the printer power is on and the printer is connected to the PC.

1 Select Start from the Windows taskbar.

2 From the Windows Start menu, select Settings and then Printers. The Printers window appears.

3 Click once on the Express or Select printer driver icon.

4 Select File from the Printers menu bar, and then select Properties. The Express or Select Properties dialog box appears.

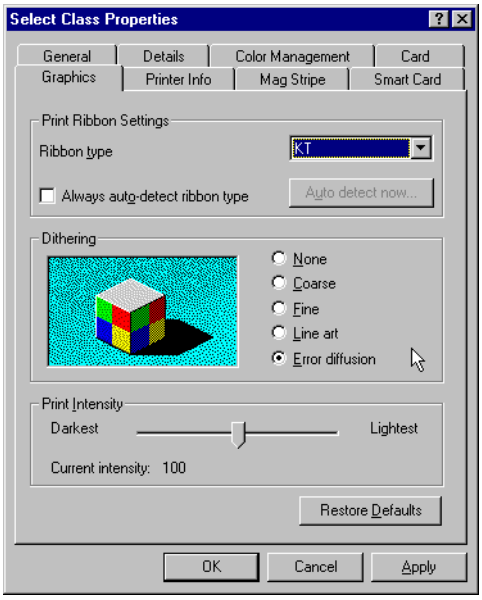


Figure 3-3: Express or Select Properties dialog box, Windows 98

5 Select the tab with the information to view or change.

Select the Print on Both Sides setting before selecting the Print Ribbon Type and Topcoat Pattern. The choices available for Print Ribbon Type and Topcoat Pattern depend on the Print on Both Sides setting.

To view help for settings, click on the What's This help button .

6 If you make changes or if you have just installed the printer driver, click Apply to save the settings. Click OK to close the dialog box. If you do not want to make changes and have saved settings once, click Cancel to close the Properties dialog box.

♦

Using the Status Monitor

The Status Monitor tracks communication between the Express or Select printer and its printer driver. The Status Monitor icon shows the state of communication between them, listed in Table 3-4.

Table 3-4: Status Monitor icons

Icon	Description	Indicates
	This Status Monitor icon is white with green.	The Status Monitor is active and communicating with the printer.

Table 3-4: Status Monitor icons

	This Status Monitor icon is gray.	The Status Monitor is suspended and not monitoring the printer for status, including errors. The Status Monitor automatically suspends when the Express or Select printer has not printed a card for 30 seconds or more.
	This Status Monitor icon is white with a white exclamation point in a red circle.	The Status Monitor is active but is not communicating with the printer. The printer might be off, cables might be loose, or a problem might exist.
	This Status Monitor icon is white with a blue magnifying glass.	The Status Monitor is in diagnostics mode. Use diagnostics when your service representative asks you to do so.

Use the Help button on the Status dialog box for more information about each window.

Opening and using the Status dialog box

You can use the Status dialog box to do the following:

- View Status Monitor information
- Run a cleaning cycle (see “Maintaining the printer” on page 4-1)
- Exit the Status Monitor
- Start or quit diagnostics
- Start or quit advanced setup

Open the Status dialog box

- Double-click on the Express or Select Status Monitor icon. The Status dialog box appears.

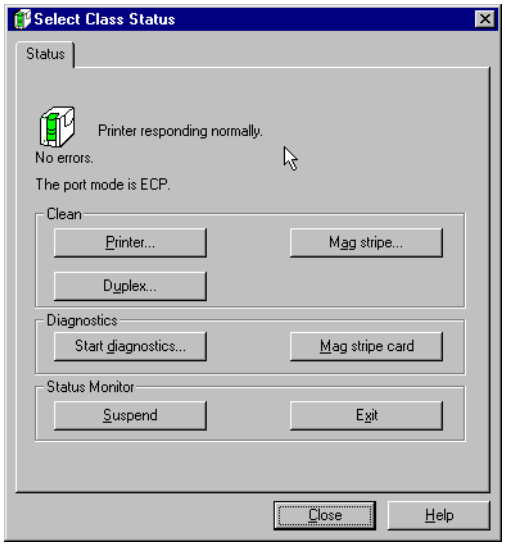


Figure 3-5: Status dialog box

Viewing Status Monitor information

The Status dialog box displays the following status information:

- The top line displays the current state of the Status Monitor or printer.
- The second line displays any messages.
- The third line displays the current parallel port mode.

Exiting the Status Monitor

Exiting the Status Monitor stops the Status Monitor (program) and closes the Status dialog box.

To exit or stop the Status Monitor, double-click on the Status Monitor icon and select Exit. You should exit the Status Monitor when you receive instructions to do so.

You cannot exit the Status Monitor while printing a card.

Starting or quitting diagnostics

The Start Diagnostics button on the Status dialog box changes the Express or Select printer driver from printing mode to diagnostics mode. When you select this button, a message appears informing you that printing of cards will stop in diagnostics mode.

You cannot start diagnostics mode while printing a card. Wait until all cards are printed and then click the Start Diagnostics button.

When you start diagnostics mode, additional tabs appear on the Status dialog box.

The Quit Diagnostics button on the Status tab changes the Express or Select printer driver from diagnostics mode to printing mode. When you select this button, a message appears informing you that the printer will reset; you can resume printing cards. The internal components will move into the position for printing cards.

If you have entered diagnostics mode and selected the Close button in the Status dialog box, a message appears that allows you to quit diagnostics before closing the Status dialog box.

Making cards

This section describes several ways to make cards using the Express or Select printer.

- Usually, cards are sent from a card creation application, which captures, organizes, and formats the information on the card. A card creation application is specially designed software that handles the types of information used on cards. See “Use a card creation application” for the steps to follow.
- If you do not have a card creation application, you can use another PC application to format the information to print on cards. If you are encoding magnetic stripe data, be sure to use an application in which you can save the result and edit it again, such as Windows WordPad™. See “Print from a PC application” for the steps to follow.

With any application, test your card design to verify the results.

Use a card creation application

1 Follow the instructions for the card creation application to capture, format, and save the data for the card.

2 In the card creation application, send cards to the printer.

The printer driver receives data for each card, prepares the card for printing, and sends each card to the printer in the order received. The printer driver keeps cards in a queue if the printer is busy.

♦

Print from a PC application

1 Select the printer settings that correspond to the cards to print. See “Working with printer settings and data” on page 3-1 for more information. Settings might include the following:

– Enable two-sided printing if you plan to print the front and back of the card.The printer must have a duplex module to print on both sides of the card.

– Set the margins for the area to print on the card. A setting of Edge-to-Edge is the same as a margin of 0.

– Set the magnetic stripe format and coercivity if you plan to encode magnetic stripe data.

2 In the application, select the Express or Select printer as the current printer.

3 Using the application's page setup feature, set the paper size to CR80 Card 2.13" x 3.38." Set all the margins to the same value as the driver. (You can set the margins in the application wider than the driver, if desired.)

4 Select the orientation for the card design—either portrait or landscape.

5 Format the text to print using a TrueType (T) font. To print using the true black (K) panel of the print ribbon, use the Black color selection. All other colors are printed using the color panels of the print ribbon if you use a color print ribbon.

6 To print on the front of the card, keep data on one page. To print the front and back of the card, send a two-page document. (Make sure printing on both sides is enabled.)

7 Also on the front of the card, enter the information to be encoded on the magnetic stripe and format the text using one of the following fonts:

– Track 1—Magnetic Stripe
– Track 2—Magnetic Stripe
– Track 3—Magnetic Stripe
– Track NTT—Magnetic Stripe

Windows must be set to display all fonts. (Some PC's are set to display TrueType fonts only.) See Windows help for more information.

The text for one magnetic stripe track must be on one line. The text must use the default type size of 3.5 or 4 points to keep characters on the same line. To view the characters, zoom in on the text. Also, follow these guidelines:

– Do not use typographic features, such as letter spacing, on magnetic stripe text.
– The paragraph style must be Normal.
– The magnetic stripe text, along with graphics and text to print on the front of the card, must be on the first page.

8 When the card data is captured and formatted correctly, select the application's print function to send the card to print.

♦

Removing cards

The card output stacker holds both completed cards and rejected cards. Remove completed cards from the output stacker to distribute printed cards. The output stacker holds up to 100 cards with a nominal thickness of 0.030 inch (0.76mm).

Remove rejected cards as soon as they are ejected from the printer so you do not need to sort though all cards to locate them. Cards are rejected when a print job is cancelled or when a problem occurs with personalizing a card.

You can remove cards when the printer power is on or off. You can remove cards while the printer is printing. Completed and rejected cards are removed in the same way.

Remove cards

1 Lift the cards from the card output stacker.

2 Dispose of partly processed cards according to your policies for handling the confidential data that might be on the cards.

♦

Responding to messages

The Express or Select printer provides information to the printer driver about the status of cards being processed. If the printer is not able to process and print a card, the printer driver displays a message on the PC in response to this situation.

Most messages describe situations from which the operator can recover. These messages include a Help button, where information about recovering from the situation is available. Typical messages might indicate that the print ribbon needs to be replaced or that a card is stuck. See the “Fix a printer problem” procedure that follows.

If a message box appears, only use the buttons on the message box to respond so that both the printer driver and printer can return to normal operation.

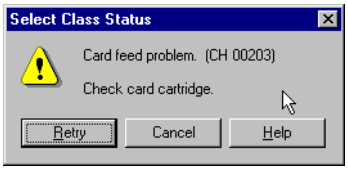


Figure 3-6: Typical message

If a message appears repeatedly and you cannot reliably correct the situation, service might be required.

Service is required if an error such as the following occurs.

Figure 3-7: Service-required message

If the Express or Select printer driver displays a message that begins with “Service required,” contact your service representative for assistance. Do not attempt to fix the

error without the assistance of your service representative because you might damage the printer.

Before you call your service representative, write down the following:

- The message and message number.
- The serial number of your Express or Select printer, located on the bottom panel.
- The driver version, described in “Working with printer settings and data” on page 3-1.

For more information about obtaining service, see “Obtaining service” on page 6-9.

Fix a printer problem

1 When a message is displayed on the PC, follow the suggested action. Click the Help button to identify the likely cause of the problem and the possible solution.

2 Follow the procedure provided in help or in this guide to fix the problem. For example, to fix a broken ribbon or supply roll, follow the procedures in help.

Most parts of the printer designed to be used by the operator are colored green. These parts include knobs for clearing jams and handles of supply cartridges.

3 After fixing the problem, close the cover of the printer.

4 Depending on the situation, the message box might be removed automatically or you might need to respond. Cards still in the printer might be ejected. Message responses include:

- If a Retry button is available, the driver sends the card or cards to the printer again. If the problem is corrected, normal operation resumes.
- If a Cancel button is available, the card is not sent to print again. If the problem is corrected, normal operation resumes.
- If only an OK button is available, the message occurred when no card was being printed or the problem requires service. If the problem is corrected, normal operation resumes.
- If the message box disappears automatically, decide whether to return to the card creation application to send the card to print again.

♦

Shutting down the system

Shut down the Express or Select printer and the PC to which it is attached when you are done making cards for the day or will be away from the system for an extended period of time. The printer and PC can be left on during lunch time and other short breaks. Follow your security procedures when leaving the printer.

Shut down the printer and system

1 Make sure all cards have completed processing before turning off the power.

2 Press the Power button to turn off power to the printer.

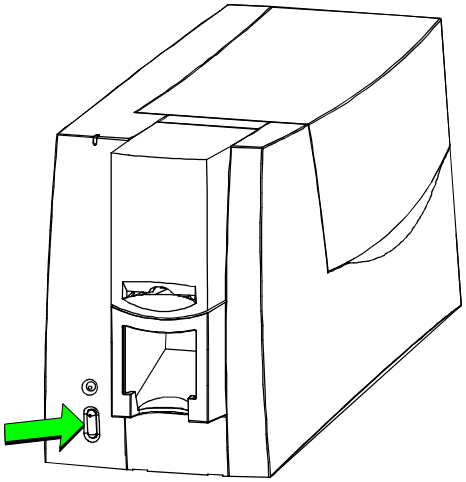


Figure 3-8: Press the power button to power off the printer

3 Follow your policy to secure unprinted card stock, supplies, and printed cards.

4 Close PC applications and power off other equipment (including the PC) following the procedure established.

♦

Maintaining the printer

4

This chapter provides information to help you maintain the Express™ or Select™ Class printer for optimal performance.It describes:

- How to use the printer cleaning card
- How to use the magnetic stripe cleaning card
- How to clean the rollers in the printer
- How to clean the printhead
- How to replace the printhead cartridge

Using the printer cleaning card

The printer requires regular cleaning, and prompts you when it is time to clean. The default Cards between cleaning value depends on the printer.You can change the number of cards between cleaning in the printer Properties or Default Document Properties dialog box. You might want to clean more often if:

- The cards, especially magnetic stripe cards, have particles on them
- A monochrome ribbon is used
- The printer is operated in a relatively dirty environment

You can run a printer cleaning card at any time, whether or not you have been prompted. See “Supplies and cards” on page B-1 for information about ordering the printer cleaning card.

Run a printer cleaning card

1 Remove the card cartridge and set it aside.

If the print ribbon sticks to the printer cleaning card, remove the print ribbon and repeat this procedure with a new printer cleaning card.

2 Peel the protective paper packing from both sides of the printer cleaning card.

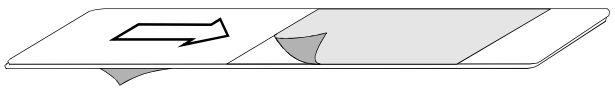


Figure 4-1: Printer cleaning card

3 Insert the printer cleaning card near the bottom of the card cartridge cavity (see Figure 4-2). The card is inserted as shown for all models except Express Class printers with a smart card module. For those printers, turn the card over so the arrow in on the bottom and the smart card icon is on top (see Figure 4-3).

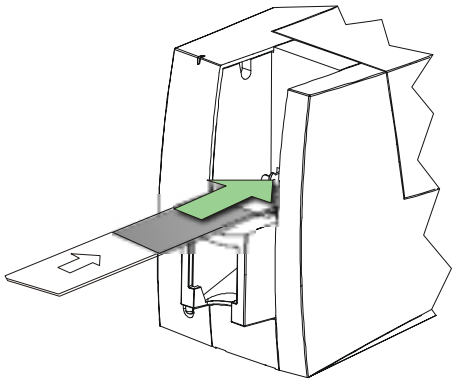


Figure 4-2: Insert the printer cleaning card

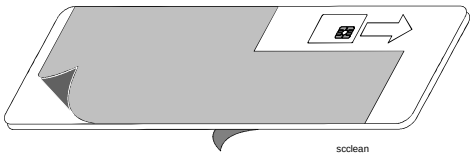


Figure 4-3: Cleaning card orientation for Express Class printers with a smart card module

4 Start a cleaning cycle by doing one of the following:

- Click the OK button when the printer driver displays the “printer requires cleaning” message. (If you do not click OK, the message appears each time you print a card, until you use the printer cleaning card.)
- Open the Status dialog box by double-clicking the icon. Click the Printer button in the Clean area.

5 The printer cleaning card is ejected on the left side of the printer, under the card cartridge.

6 Discard the used printer cleaning card.

7 Replace the card cartridge. Push the bottom of the card cartridge until it clicks into place.

The printer module is cleaned and the printer is ready to resume normal operation.

♦

Using the duplex cleaning card

If the model of your printer is S2, use the duplex cleaning card to maintain card quality and reduce the likelihood of jammed cards in the duplex module. Use the duplex

cleaning card once a month or when problems occur, such as repeated card jams in the duplex module. See “Supplies and cards” on page B-1 for ordering information.

Use the duplex cleaning card

1 Remove the card cartridge and set it aside.

If the print ribbon sticks to the duplex cleaning card, remove the print ribbon and repeat this procedure with a new duplex cleaning card.

2 Peel the middle strip of protective paper from both sides of the duplex cleaning card.

The outside protective paper strips must stay on the card.

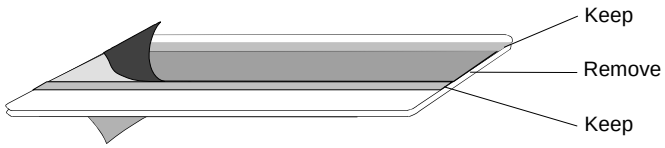


Figure 4-4: Duplex cleaning card

3 Insert the duplex cleaning card near the bottom of the card cartridge cavity (see Figure 4-5).

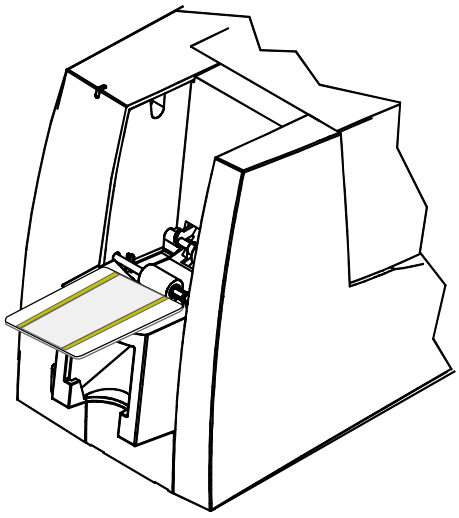


Figure 4-5: Insert the duplex cleaning card

4 Open the Status dialog box by double-clicking the icon.

5 Click the Duplex button in the Clean area.

The printer automatically runs the duplex cleaning process and ejects the card in the output stacker when it is complete.

6 Remove the used cleaning card and discard it.

7 Replace the card cartridge. Push the bottom of the card cartridge until it clicks into place.

The duplex module is clean and the printer is ready to resume normal operation.

♦

Using the magnetic stripe cleaning card

The printer's magnetic stripe module should be cleaned when the printer has displayed several magnetic stripe errors that list running the magnetic stripe cleaning card as a solution. See "Supplies and cards" on page B-1 for information about ordering magnetic stripe cleaning cards.

⚠ Do not use the magnetic stripe cleaning card more than once every 2000 cards or excessive wear can result.

Run the magnetic stripe cleaning card

1 Insert a magnetic stripe cleaning card into the exception card slot. Make sure the arrow is on top and pointing into the printer. (You can also remove the card cartridge and place the cleaning card on the card input rollers.)

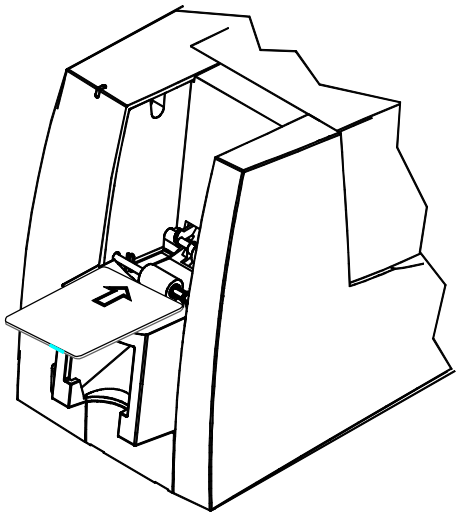


Figure 4-6: Insert the magnetic stripe cleaning card

⚠ Do not peel off the blue stripe on the back of the card.

2 Open the Status dialog box by double-clicking the icon.

3 Click the Clean Magnetic Stripe button.

The printer automatically runs the magnetic stripe cleaning process and ejects the card in the output stacker when it is complete.

4 Remove the used magnetic stripe cleaning card. The card can be used again.

♦

Cleaning the printer rollers

The rollers in the printer move the card into position to begin operations, such as printing, and move the card during operations. Clean the rollers once a month or when problems occur, such as repeated card jams. To clean rollers, use:

- Lint-free cloth
- T960 citrus solvent (part number TUL003-007) OR Isopropyl alcohol (ISA)

Clean printer rollers

1 Power off the printer, and disconnect it from the power source.

2 Open the status monitor by double-clicking the printer icon.

ⓘ Make sure that printing of cards is complete before starting diagnostics.

3 Click the “Start Diagnostics” button, and click Yes to start diagnostics. Additional tabs appear on the Status dialog box.

4 Click the Motor/Sensor Tests tab.

5 Clean the two pick rollers:

a Remove the card cartridge.

b Moisten an area of the lint-free cloth with citrus solvent or isopropyl alcohol.

c Place the moist area of the cloth on the first pick roller, in the area of the card cartridge (step 1 in Figure 4-7).

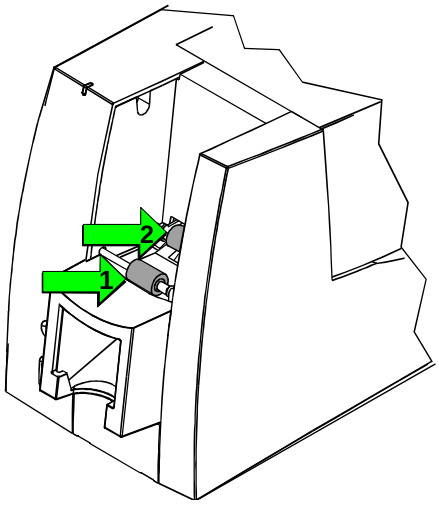


Figure 4-7: Clean the pick rollers

d Click “Pick Motor test” and then click the Start button.

e Repeat steps b through d until no dirt appears on the cloth.

f Repeat steps a through e, placing the cloth on the second pick roller (step 2 in Figure 4-7).

g Replace the card cartridge.

6 Clean the transport area rollers:

a Open the cover and remove the print ribbon cartridge.

b Moisten an area of the lint-free cloth with citrus solvent or isopropyl alcohol.

c Place the moist area of the cloth on the first transport roller (step 1 in Figure 4-8).

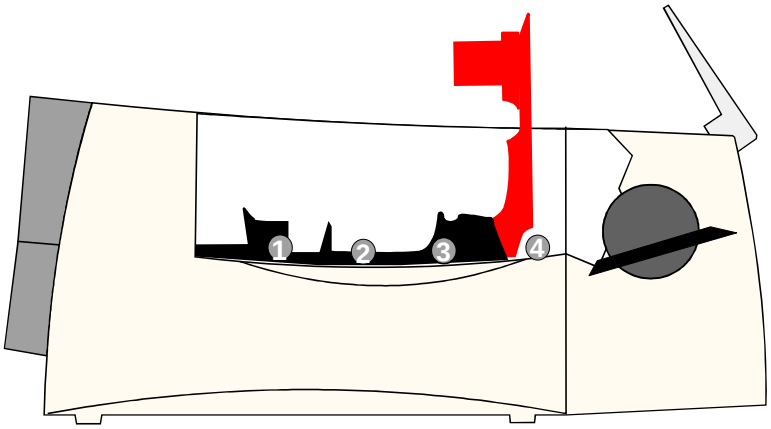


Figure 4-8: Clean rollers in the card track

d Click “Transport Motor test” and then click the Start button.

e Repeat steps b through d until no dirt appears on the cloth.

f Repeat steps b through e, placing the cloth on the second transport roller (step 2 in Figure 4-8).

g Repeat steps b through e, placing the cloth on the double rollers (step 3 in Figure 4-8).

h Replace the printer ribbon cartridge, close the swing arm, and close the cover.

7 If the printer has a duplex module, clean the exit roller.

a Open the duplex cover.

b Moisten an area of the lint-free cloth with citrus solvent or isopropyl alcohol.

c Place the moist area of the cloth on the exit roller (step 1 in Figure 4-8).

d Click “Transport Motor test” and then click the Start button.

e Repeat steps b and c until no dirt appears on the cloth.

f Close the duplex cover.

8 Connect the power cable to the power source and power on the printer.

9 Print a card to verify the quality of printing. You can print a Windows test page or a card using your card creation application.

♦

Cleaning the printhead

The printhead can have contamination stuck to it. You might notice it as unprinted lines on printed cards. Clean the printhead only when needed, such as:

- The printhead has been accidently touched, such as when changing supplies or cleaning a card jam
- You have replaced the printhead
- Your observe problems with card appearance, as described in “Troubleshooting” on page 6-1.

⚠ Do not touch the printhead with your fingers. The oils on your fingers can damage the printhead.

Use isopropyl alcohol and a lint-free cloth to clean the printhead. Do not use a cotton swab. The fibers from the cotton can stick to the printhead.

Clean the printhead

1 Power off the printer, and disconnect it from the power source.

2 Press down on the swing arm. The push latch will release the swing arm. Lift the swing arm until it is fully open.

3 Moisten the lint-free cloth with isopropyl alcohol.

4 Using gentle pressure, move the cleaning cloth back and forth along the full length of the printhead edge. Be sure to clean the rounded edge of the printhead completely.

5 Close the swing arm, pressing it down until the push latch clicks into place.

6 Connect the power cable to the power source and power on the printer.

7 Print a card to verify the quality of printing. You can print a Windows test page or a card using your card creation application. If card quality is still inadequate, see “Troubleshooting” on page 6-1.

♦

Replacing the printhead cartridge

The Express or Select printer uses an operator-replaceable printhead cartridge. For more information about printhead cartridges, see “Supplies and cards” on page B-1.

Remove the printhead cartridge

⚠ Do not touch the printing edge of the printhead cartridge. If you do, clean it, as described in “Cleaning the printhead” on page 4-7.

1 Power off the printer.

2 Open the top cover.

3 Push down on the swing arm. The push latch will release the swing arm. Lift the swing arm up until it is fully open.

4 Put on the ESD strap and ground it. Follow the instructions with the strap.

5 Press down on the green printhead cartridge latch to release the printhead (step 1 in Figure 4-9).

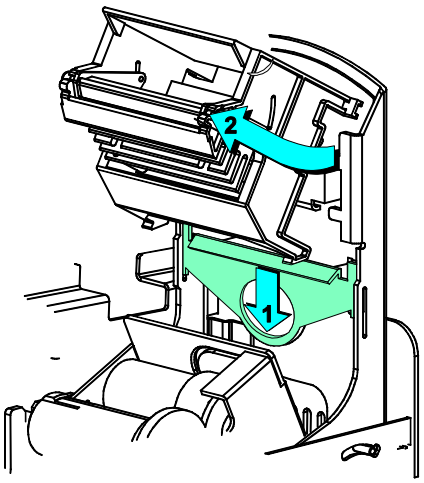


Figure 4-9: Printhead cartridge latch lever

6 Lift the printhead cartridge up and off the swing arm (step 2 in Figure 4-9).

7 Push the locking tabs to the side. Remove the printhead cable from the printhead cartridge (see Figure 4-10).

ⓘ The printhead installed in your printer might have a slightly different location for the printhead cable receptacle.

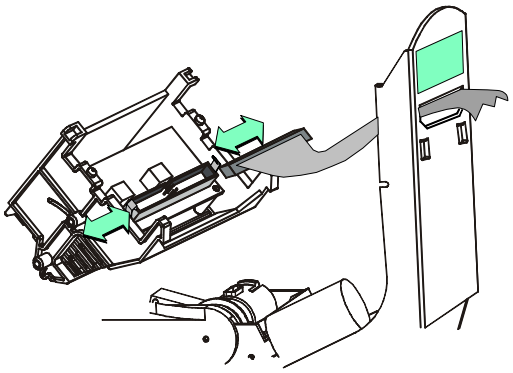


Figure 4-10: Remove or replace the printhead cable

♦

Replace the printhead cartridge

1 Push the printhead cable into the new printhead cartridge (see Figure 4-10). Make sure the locking tabs are in place.

⚠ Do not press on the wires of the printhead cable.

2 Align the printhead cartridge pins with the printhead cartridge slots on the swing arm (see Figure 4-11).

3 Slide the new printhead cartridge onto the swing arm, so the pins slide into slots (step 1 in Figure 4-11).

4 Hold the printhead cartridge latch lever down (step 2 in Figure 4-11) and pivot the printhead cartridge down toward the swing arm (step 3 in Figure 4-11).

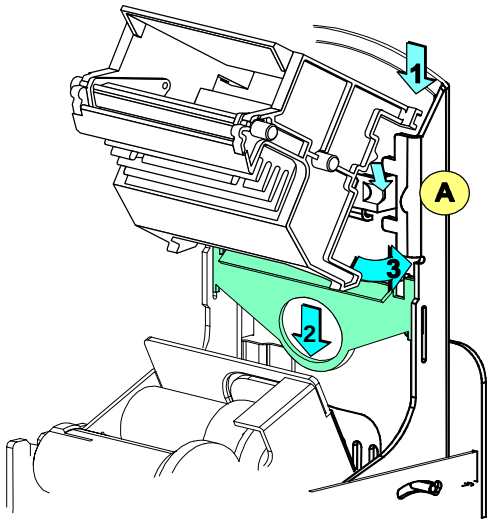


Figure 4-11: Replace the printhead cartridge

Be sure that the tabs on the back of the printhead cartridge fit into the notches on the swing arm spring bar securely (location A in Figure 4-11). Release the latch lever when the printhead cartridge is in place.

5 Clean the printhead. See “Clean the printhead” on page 4-7.

6 Close the swing arm, pressing it down until the push latch clicks into place.

7 Gently pull the excess printhead cartridge cable out of the top of the swing arm.

8 Remove the ESD strap.

9 Close the cover.

10 Power on the printer.

11 Print a card to verify the quality of printing. You can print a Windows test page or a card using your card creation application. If card quality is still inadequate, see “Troubleshooting” on page 6-1.

♦

Advanced Information

5

This chapter describes advanced tasks you might perform using the printer driver. To perform the procedures in this chapter, you should know how to use the printer to print cards and be comfortable using the Windows NT or Windows 95/98 operating system. It describes:

- How to reinstall the printer driver
- How to install two printers on one PC
- How to print over a network
- The operational settings in the printer that you can change

Reinstalling the printer driver

Obtain the most current Express or Select Class printer driver from the Datacard Web site at www.datacard.com. You can also request the current driver from your Datacard-authorized representative. Be sure to obtain the correct printer driver for your operating system--Microsoft Windows 95/98 or Windows NT.

ⓘ To install a second printer driver of the same class on a PC running Windows 95/98, see “Installing two printers (Windows 95/98)” on page 5-5. (You cannot install a second printer driver on a PC running Windows NT.) Do not install two printer drivers unless you have connected two printers to the PC.

Remove the existing printer driver

Follow these steps for Windows NT and Windows 95/98.

Remove the existing printer driver

ⓘ Make sure that all jobs have been printed or have been deleted from the print spooler before removing the existing driver. See Windows help to use the print spooler.

1 Close all applications. Do not close Windows.

2 Select Settings and then Printers from the Windows Start menu. The Printers window appears.

3 In the Printers window, click once on the printer icon to select it. The icon has the name chosen during printer driver installation.

4 Press the Delete key.

5 When the confirmation prompt appears, select Yes to delete the existing printer driver.

6 Restart the PC. DO one of the following:

- Select Yes for the prompt that asks if you want to restart Windows.
- Close the Printers window. From the Windows Start menu, select Shut Down, and then select Restart from the dialog box.

♦

An Express or Select Class printer cannot be installed on the same PC as a Magna Class or ImageCard IV printer. If you have a Magna Class or ImageCard IV printer driver installed on this PC, see the User Guide for that printer to remove the printer driver before installing an Express or Select printer.

Install the printer driver on Windows 95/98

1 Make sure the printer is connected to the PC and powered on.

2 Close all applications. Do not close Windows.

3 Insert the first Windows 95/98 printer driver diskette into the disk drive of the PC.

4 Select Settings and then Printers from the Windows Start menu. The Printers window appears.

5 In the Printers window, double-click on the Add Printer icon.

6 When the Manufacturers list appears, select the Have Disk button. If needed, click on the Browse button to select the printer driver diskette location.

7 Select the port to which you have connected the printer.

8 In the Printer Name box, use the default name or change the printer name to match the name on the front of your printer. For example, you might change “Datacard Select Class” to “ImageCard S2” or “UltraGrafix S”. Do not use the <>:"/ \ and | characters in the name.

9 Remove the diskette and insert the next diskette when prompted.

- A Version Conflict dialog might appear as the installer copies files. Select Yes to keep the existing files on your PC.
- A Code Page Mismatch dialog might appear. Select Yes to keep the existing files on your PC.

10 Remove the last diskette. A message will appear that prompts you to restart Windows: Follow the prompt. If a message prompts you to run the firmware update utility, follow the prompt.

11 After installing the printer driver, there are several other tasks you might need to perform. They are:

- Select whether to print on two sides (duplex printing)
- Select the ribbon type before printing a test card. See “Working with printer settings and data” on page 3-1 for steps to follow.

– If you use a print ribbon with a topcoat (T) panel, select the topcoat pattern for the front of the card, the back of the card, or both.

– If the printer has a magnetic stripe module, select the magnetic stripe coercivity and encoding format. See “Working with printer settings and data” on page 3-1 for steps to follow.

ⓘ The card creation application might send settings with cards which override the settings you make in the Properties dialog box.

12 Print a Windows test page to verify that the printer and driver are working. See “Print the Windows test page” on page 2-17 for more information.

♦

Use the following steps to install the printer driver on PCs running Windows NT.

ⓘ If you move the printer from a PC running Windows 95/98 to a PC running Windows NT 4.0, use the printer Properties dialog box on Windows 95/98 to set “Always autodetect” before moving the printer.

ⓘ An Express or Select Class printer cannot be installed on the same PC as a Magna Class or ImageCard IV printer. If you have a Magna Class or ImageCard IV printer driver installed on this PC, see the User Guide for that printer to remove the printer driver before installing an Express or Select printer.

Install the printer driver on Windows NT

ⓘ Use the Express or Select printer driver for Windows NT only with a PC that runs Windows NT 4.0 with Service Pack 4 or higher. The printer driver is not supported for PCs with Alpha, MIPS, or PowerPC processors.

1 Make sure the printer is connected to the PC and powered on.

2 Be sure you are logged in to the Windows NT system as the administrator before starting this procedure.

3 Close all open applications. Do not close Windows NT.

4 Insert the first Windows NT printer driver diskette into the disk drive of the PC.

5 Select Settings and then Printers from the Start menu.

6 In the Printers window, double-click on the Add Printer icon. (Only the administrator can use this icon to install the printer driver on the PC.)

7 Select the “My computer” choice, and not the “Network” choice. If the “My computer” choice is not available, make sure you have logged on as the administrator.

8 Select the port to which you have connected the printer.

– Do not select the “Enable printer pooling” choice when installing the printer driver.

9 When the Manufacturers list appears, select the Have Disk button. If needed, select the Browse button to specify the location of the printer driver diskette.

10 Make sure the printer has a unique name on the PC. If you change the printer name, do not use the <>:"/\ and | characters in the name. The PC will not be able to enable the driver if you use those characters.

– Printer sharing is not supported by the current version of the printer driver for Express Class printers. Select Class printers can be shared.

11 Do not print a test page as part of the installation. You must select the ribbon type before printing a test page.

– A Version Conflict dialog might appear during the installation. If so, select Yes to keep the existing files on your PC.

12 Remove the current diskette and insert the next diskette when prompted.

13 Remove the diskette and restart Windows NT when prompted after the printer driver is installed.

If the “print a test page” choice remained selected, you might see messages regarding the test page at the same time as the prompt to restart Windows NT.

14 When the PC restarts, log in as the administrator again.

15 If a message appears prompting you to update the printer firmware, follow the prompt. Do NOT power off the printer while running the firmware update utiliry.

16 After installing the printer driver, there are several other tasks you might need to perform. They are:

a Set permissions to the printer for other users of the PC to support printing or to prevent access to the printer. See “Setting printer permissions” on page C-3

b Select whether to print on two sides (duplex printing). See “Working with printer settings and data” on page 3-1 for steps to follow.

c Select the print ribbon type before print a test card. See “Working with printer settings and data” on page 3-1 for steps to follow.

d If you use a print ribbon with a topcoat (T) panel, select the topcoat pattern from the front of the card, the back of the card, or both. See “Working with printer settings and data” on page 3-1 for steps to follow.

e If the printer has a magnetic stripe module, select the magnetic stripe coercivity and encoding format. See “Working with printer settings and data” on page 3-1 for steps to follow.

The card creation application might send settings with cards which override the settings you make in the Document Default Properties dialog box.

f Make sure that users of the printer have permission to write files to the temp file location specified in the PC configuration. If the temp file location is not specified, the driver uses the root location for the printer driver, WINNT.

17 Print a Windows test page card from the PC to verify that the driver is installed correctly. See “Print the Windows test page” on page 2-17 for steps to follow.

If you downloaded the driver from the Internet, you can delete the folders created, such as disk1, from your hard drive after installing the driver. You can also delete the downloaded file.

♦

Installing two printers (Windows 95/98)

You can connect two Express or Select Class printers to a PC running the Windows 95 or Windows 98 operating system.

Two printers cannot be connected to a PC running Windows NT.

Install two printers on a Windows 95/98 PC

1 Make sure the PC has two ECP parallel ports. If the PC has only one parallel port, obtain and install a second ECP parallel port on the PC.

2 On diskette 1 for the printer driver, locate the Readme.rtf file and open it using Word, WordPad, or another text application. Follow the instructions in that file (which are very similar to these instructions).

3 Install the printer driver for the first printer. Make sure to record the name and printer port used for the printer. See “Installing the printer driver” on page 2-11.

4 Exit the Status Monitor for the first printer before installing the second printer driver.

   a Right-click on the printer icon in the right corner of the status bar.

   b Select Exit from the popup menu.

5 Install the second printer driver (“Installing the printer driver” on page 2-11), following these guidelines:

   – Make sure the second printer uses a different name. If you keep the default name for both printers, Windows will add the copy number (2) to the name for the second printer.

   – Make sure to use a different parallel port for the second printer.

   – In the Add Printer wizard, select the “Replace existing driver” choice (not the recommended “Keep existing driver” choice).

♦

Using two printers

Follow these guidelines to use two printers attached to one PC.

- If you plan to use both printers during a PC session, power on both printers and then power on the PC.

- View the title bar of messages for the name of the printer to which the message applies.
- You can use the Datacard QuikWorks Printer Fanout Controller to print to multiple Express or Select Class printers. This application requires QuikWorks V. 2.5 or higher.

♦

Network printing

This section describes how you can print to an Express or Select printer over a network using Microsoft File and Printer Sharing.

Printer sharing is not supported for the Express Class printer on Windows NT.

The Express or Select printer drivers provide support for local printer sharing. When a printer is locally shared, the printer is attached to one PC (host) on a network. Users at other PCs on the network (clients) can print to the shared printer over the network. Up to 10 client PCs can share the printer at one time. Users at client PCs do not have the same level of access to the printer driver as a user at the local PC.

Two operating system configurations are supported:

- Both the client and host PCs run Windows NT 4.0 Workstation with Service Pack 4 or higher installed.
- Both the client and host PCs run Windows 98 (Second Edition).

Requirements for local printer sharing

Before sharing a printer over the network, meet the following requirements:

- A network card is installed and working on each PC.
- The same Windows operating system is installed and operating on each PC.

If you are installing both a network card and a service pack or Windows upgrade, install the network card first and then install the service pack or upgrade. If you installed a service pack or upgrade before installing a network card, you must install the service pack or upgrade again.

- The printer must be enabled for sharing. See Windows help for information on enabling printer sharing.
- The PC with the printer attached must remain on, and the Windows operating system must be running. For Windows NT, a user with Full Control permission to the printer must be logged on at the host PC so that other users can print.
- For Windows NT, you must set up user permission to the client PC and user permission to the host PC. See administrator information for Windows NT for more information.

Printer and PC setup

This section shows the components you need to use the Express or Select printer with local printer sharing.

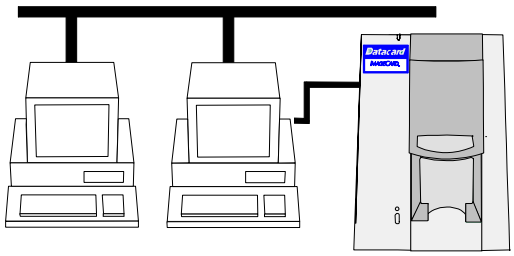


Figure 5-1: Printer sharing

Network: A network must be set up and working before you begin. This document does not address network setup or requirements.

Host PC: The host PC has the printer attached to its parallel port. It must be connected to the network. For Windows NT, you need to set up users and access.

Parallel port connection: The printer is connected to the ECP-capable parallel port of the host PC as though you were using it just from the host PC.

Client PC: The client PC is connected to the host PC over the network.

Setting up printing over the network

To set up local printer sharing, do the following:

1 Install the printer driver on the host PC. See “Installing the printer driver” on page 2-13 for more information.

2 Enable printer sharing. See Windows help for more information.

3 For Windows NT, set up an account for each user at the host PC.

4 For Windows NT, grant users' permission to the printer from the host PC, including:

- Client PC users who have Print permission to the printer.
- Host PC users who also have Full Control permission to the printer.
- Host PC users who have No Access permission to the printer.

5 For Windows NT, set up an account for the user at the client PC.

6 Make sure client PC users can access the host PC from the network.

7 Install the printer driver on the client PC. See the following procedure.

♦

Installing the printer driver on the client PC

If an Express Class, Select Class, ImageCard IV, or Magna Class printer driver is installed on the client PC, delete the printer driver and reboot the PC.

Install the printer driver on the client PC

1 Make sure that the printer and driver on the host PC are working properly before beginning this task.

2 Start Windows at the client PC.

For Windows NT, log onto the client PC as a user with access rights to the host PC. You also need Print permission to the shared printer to open the Default Document Properties dialog box and to print test cards.

3 Use Windows Explorer or Network Neighborhood to locate the host PC.

4 When you locate the host PC, click the icon for the host PC to display the Enter Network Password dialog box. Type your password and click OK to log on to the host PC. Keep the window open during printer driver installation.

5 In the Printers window, double-click the Add Printers icon.

6 In the Add Printers wizard, select the following choices:

a Select "Network printer server" and not "My Computer."

b In the Connect to Printer window, wait while network printers appear in the Shared Printers list.

c If needed, double-click a server name to see the names of printers attached. Wait while the list appears.

d Select the printer to which the user will print. The printer name appears in the Printer box.

Do not change the name of the printer when you install it at the client PC.

e Click OK to continue.

If you have not logged into the PC with the printer attached, you will receive a message. Return to step 2 and repeat the procedure.

You can use printer sharing on the host PC to print to an Express or Select printer attached to another PC. Both printers must be Express or Select printers and both printers must have different names. Install the Express or Select printer directly attached to the PC first, and then follow the steps in this section to install the second (network) printer.

♦

Perform management tasks at the host PC

The user at the host PC has more control over the printer. This section describes some tasks performed at the host PC.

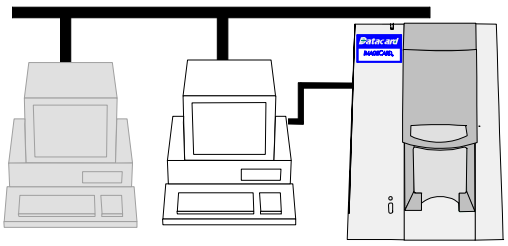


Figure 5-2: Host PC for printer sharing

For Windows NT, the user must be logged in as a user with Full Control permission.

- **Manage all jobs in the print queue.** You can use Print Manager to view all jobs in the print queue and to pause or delete any jobs in the print queue, no matter who submitted the job. See Windows help for information on using Print Manager.
- **See and respond to messages.** If the printer is not able to process and print a card, the printer driver displays a message on the host PC. You can see the message and view help, which guides you in resolving the situation. Printing for all users is suspended until the situation is resolved. See “Responding to messages” on page 3-10 for details.
- **On Windows NT, set printer values, such as ribbon type, for all users.** The values you set in the Document Default Properties dialog box apply to all users. Several values can be changed at client PCs, but those values apply only to the print jobs being sent. Values you set are used at client PCs after the client PC queries the host PC. Open the Default Document Properties dialog box at each client PC after setting values at the host PC to query the host PC. (You can close the dialog at the client PC after viewing it.) If you do not open the Default Document Properties dialog, the client PC does not query the host PC, the first card printed will not use the new settings, and you will need to send the card to print again.
- **On Windows 98, set values, such as the cards between cleaning, that control card processing for all users.** The values you set for Ribbon type, Cards between cleaning, and Mag Stripe encoding attempts apply to all users. Record the ribbon type so you can set it correctly at the client PC.
- **View printer status.** The host PC runs the Status Monitor. You can open the Status Monitor and view printer status. See “Using the Status Monitor” on page 3-5 for details.
- **Use diagnostics and advanced setup.** The Status Monitor dialog box on the host PC provides access to diagnostics and advanced setup, where you can change some settings (such as the position of printing) and run tests with the

guidance of your service representative. See“Starting or quitting diagnostics” on page 3-7 for details.

- **Run the firmware update utility.** The host PC displays a prompt when you need to run the firmware update utility. The utility works only from a PC with the printer connected to its parallel port.

Using the printer from the client PC

Users at the client PC can perform several actions, including:

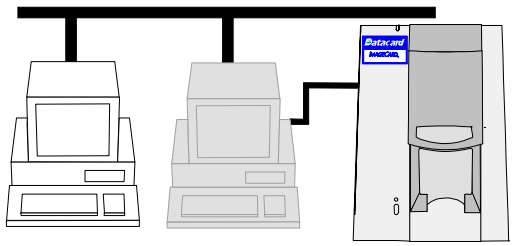


Figure 5-3: Client PC for printer sharing

For Windows NT, users at the client PC must be logged into the host PC and must have Print permission to the printer.

- **Print a card using an application at the client PC.** At the client PC, you can use an application to print cards by selecting the Express or Select printer as the printer. See “Making cards” on page 3-8 for details.
- **Print a card using an application and magnetic stripe fonts from the client PC.** When you print from an application such as Microsoft Word, you can type text and format it using fonts provided by the printer driver. See “Making cards” on page 3-8 for details.
- **For Windows 98, set card design values.** Select the same Ribbon type as the Host PC. For other settings, such as Magnetic stripe encoding format, Print on two sides, and Apply option station material, the printer must support the setting you select but the setting can be different from the Host PC setting.
- **For Windows NT, change card design settings**, including settings such as landscape or portrait orientation. Many settings are read from the host PC and cannot be selected.
- **Pause or delete print jobs you submitted from Print Manager at the client PC.** The card job remains in the print queue until it is sent to the printer. See Windows help for information on using Print Manager.
- **On Windows NT, view Print Manager to see printer messages from the host PC.** The card job remains in the print queue until it is sent to the printer. You can expand the Status column in the Print Manager dialog box to see the messages.

Changing the type of print ribbon

When you change the type of print ribbon you use, perform the following tasks:

- Change the print ribbon in the printer
- Change the Print Ribbon Type setting
- Change the card design if needed
- Change the printhead if needed
- Change printhead settings through the Status Monitor
- Print sample cards to verify the new setup

Change the print ribbon

Change the print ribbon in the printer. See “Loading the print ribbon” on page 2-7 for information on changing the ribbon in the printer.

Change the Print Ribbon Type setting

See “Working with printer settings and data” on page 3-1 for information on changing the print ribbon setting.

- If you use a solid-color ribbon such as red or gold, choose Black (K) for the Print Ribbon Type (rather than using “Always Autodetect”).
- If you are using a scratch-off ribbon, choose Black (K) for the print ribbon type.
- If you use any other ribbon type, the autodetect feature and the “Print on both sides” selection will choose the correct selection.

If “Always Autodetect” is selected in the Windows 98 Properties dialog box, decide whether to power the printer off and on to detect the new ribbon type or to change from autodetect to selecting a ribbon type.

  – If you use a YMCK or YMCKT ribbon and you want to use a panel set for each side of the card, you can power cycle the printer and keep the “Always Autodetect” setting.
  – If you use a YMCK or YMCKT ribbon and you want to use one panel set to print both sides of the card, you must deselect the “Always Autodetect” setting and select the ribbon type and usage (such as “YMC (color) front; K (black) back”) from the Ribbon Type list.

Make sure your ribbon type and card design are compatible.

Change the card design

Change the card design to use the new ribbon type or use a new card design, if needed. Some situations where you might change the card design and ribbon type are:

- You decide to implement a two-step printing process. You might decide to pre-print cards with information such as a logo using a monochrome ribbon, and then personalize cards using a color (YMC) ribbon. Or, you might personalize cards and then print scratch-off ribbon in an area of the card.
- You decide to add features to the card. For example, you might add a Topcoat (T) panel on the front or back, or change from printing color on the front only to printing both sides with color. Usually, adding a feature to the card is a one-time change.

Two-step printing process

If you use a two-step printing process, you should plan to print at least one step of the process as a batch. For example, if you print a one-color logo before you personalize cards, print enough cards with the logo to last (you might print enough for one day's personalization or one week's personalization). (In the following process, you would begin with step 3.)

If you use the scratch-off ribbon and have one printer, you must print each card twice, first to personalize the cards, second to print the scratch-off material. Plan to use a batch process, first personalizing cards and then printing with the scratch-off ribbon. A suggested batch process is:

1 Personalize cards with a ribbon that does not include a T panel. Use a ribbon such as YMCK or K. If you use a T panel, make sure the design blocks the T panel from printing in the area where scratch-off ribbon will be printed.

ⓘ Be sure to print some sample cards for use in testing the scratch-off ribbon.

ⓘ Carefully handle printed cards that you plan to print again. Avoid getting dirt or fingerprints on the cards.

2 Run a printer cleaning card. See "Using the printer cleaning card" on page 4-1.

3 Power off the printer, and then install a monochrome printhead. See "Replacing the printhead cartridge" on page 4-7.

4 Change the ribbon in the printer. See "Loading the print ribbon" on page 2-7.

5 Power on the printer before using the Properties or Default Document Properties dialog boxes.

6 Set the Print Ribbon Type to "K." See "Working with printer settings and data" on page 3-1.

7 Set the Intensity value for K. See "Changing operational settings" on page 5-14.

8 Use a card design for the scratch-off material that has a black static bitmap over the areas where you want the scratch-off material to be applied.

9 Print one or more sample cards. Verify that the scratch off material is in the correct location.

10 Print personalized cards to apply scratch-off ribbon.

11 When the batch is complete, install the color printhead (if needed), change the ribbon in the printer, change the ribbon type setting, and change the K Intensity/ Voltage if needed. Run a cleaning card and return to step 1.

♦

Change the printhead

If you use a two-step printing process and use a monochrome ribbon for one step and a color ribbon for the other step of the process, you need to change from a monochrome printhead to a color printhead.

Installing a color printhead in an UltraGrafix (monochrome) printer will not permit you to print in color.

The method of creating an image with color ribbon is slightly different from the method of creating an image with a monochrome ribbon. Datacard provides two printheads to support the needs of the two printing methods. To achieve complete coverage without causing wrinkles or other printing problems, use the correct printhead for the type of ribbon you use. See “Replacing the printhead cartridge” on page 4-7 for information on removing and replacing a printhead.

Change printhead settings

Change printhead settings to match the new ribbon type if you use a two step printing process. If you are changing features of a card design, you might also decide to change printhead settings to achieve best results. For example, if you are adding text that prints in black (K), you might adjust K printing intensity for the clearest text printing.

If you use a color ribbon that includes a K panel, and then use monochrome ribbon (such as a red ribbon or a scratch-off ribbon), plan to change the K printing intensity, using a process such as the following:

1 Start diagnostics. See “Changing operational settings” on page 5-14 for information.

2 Create a log for K intensity values for each ribbon type you use.

3 Use the Printhead tab to change K intensity values. Record the current K value and ribbon type.

4 Change the K intensity value, using the following guidelines:

- For scratch-off ribbon, the recommended intensity range is 10000 to 12000. Begin by setting the lower value (10000). Increase the value by 500 until the scratch-off material covers the intended area so that you cannot see through the scratch-off material. See Help for the Printhead tab for detailed steps to follow.
- For printing text with a K panel, the intensity range is usually near 14000. The intensity is correct when all of the characters are fully formed (no blank spots), but not fuzzy due to “growth” at the edges. Smaller text characters can require

a higher intensity than larger characters. See Help for the Printhead tab for detailed steps to follow.

– The correct setting produces cards that meet your guidelines.

5 Record the new value in the log and return to printing mode.

♦

Print sample cards

After the printhead, settings, and/or card design are changed, print sample cards, using the new or changed card design (s). Test all aspects of the card design, including printing, alignment, magnetic stripe encoding, barcode readability, and durability.

When you use a two-step printing process, make sure to prepare enough cards in the first step to allow thorough testing in the second step of your overall printing process.

When to make changes

This section provides some representative examples of changes you might make and the changes required for the printer.

Change	Print ribbon 1	Print ribbon 2	Change printhead?	Change K intensity?
Add color printing to the back of a card with color on the front	YMCKK (old design)	YMCK/ YMCK	No	No
Add scratch-off area to color and black ID card	YMCKTKT	Scratch-off (K)	Yes	Yes
Add scratch-off area to color ID card	YMCT/ YMCT	Scratch-off (K)	Yes	No
Add scratch-off area to one-color ID card	Green (K)	Scratch-off (K)	No	Yes
Pre-print cards with red logo, then print color and black ID cards	Red (K)	YMCKTKT	Yes	No

Changing operational settings

This section describes the operational settings for the printer that you can change using the printer driver. These settings can be used to customize the performance of your printer to meet the demands of your card design.

For detailed information about how to change each setting, see Help for the appropriate dialog box.

You must use the PC to which the printer is connected to change operational settings. You cannot change operational settings using a PC connected through a network.

You can work with the following:

- **Printer values**

  Before changing any operational settings, you need to record the current values in the printer using the Printer Values tab. This record will allow you to return to current settings if the changes you make do not address your concerns.

- **Printing intensity**

  You can fine-tune the appearance and function of cards you print by changing the intensity used to print types of panels. For full-color printing (YMC panels), intensity affects the darkness or lightness of printing. For black (K) panels, intensity affects the thickness of letters and barcodes. For topcoat (T) panels in the print ribbon, intensity affects the degree of topcoat coverage. Use the Printhead tab of the Status Monitor to change the printing intensity.

- **Position of printing on the card**

  You can change where the printing is positioned on the card. For Select Printers, when you select “Edge to edge” as the Print Margin value (in the Default Document Properties dialog box), you should set the position of printing on the card for best appearance and smooth operation. You can also change the position of printing to address card quality concerns. Use the Printhead tab of the Status Monitor to change the position of printing on the card.

Diagnostics are designed to be used with the assistance of your service representative, who can guide you in making settings that will meet your specific needs.

Operational settings should be changed only by someone familiar with the operation of the printer and with Windows. Allow enough time to perform all steps of the procedures to achieve the card quality desired.

If this information does not result in the print quality that you want, contact your service representative for assistance.

Troubleshooting

6

This chapter explains how to troubleshoot the Express or Select printer and how to obtain service. It explains:

- What to do if you think the printer is not working
- Problems you might see in the appearance of cards
- How to obtain service
- How to package the printer to return for service

When you experience problems using the printer, follow the guidelines in this chapter.

- Record the printer model number and serial number (located on the bottom of the printer).
- Keep notes on the problem, including the message number and the solutions you attempt.
- Obtain information about the supplies used, including:
  - Card stock and type (such as composite or PVC, three-track magnetic stripe, manufacturer, and so on). This information is located on the packaging for cards.
  - Type of ribbon (such as YMCK) and the lot number used for personalizing cards. This information is located on the package of the ribbon.

If you need to call for service, this information will help your service representative address your concerns.

For more information about messages, see “Responding to messages” on page 3-10.

If you think the printer is not working

The printer, printer driver, and card creation application work together to produce cards. If the system is not working as you expect and does not display messages, follow these steps to isolate the source of the problem before contacting your service representative.

1 Make a printer test card, following the steps in “Make a Printer test card” on page 2-15.

  If the printer does not make a test card, the printer is likely not working properly.

2 Print a Windows test page, following the steps in “Print the Windows test page” on page 2-17.

  If the Windows test page does not print as expected, the printer driver is likely not set or operating properly.

3 Check “Setup tips” on page 2-14 to make sure the PC and printer are set up correctly. Make a sample card using the card creation application.

If the sample card does not print the card as expected, the card creation application is likely not set or operating properly.

Problems with card appearance

Problems with card appearance can be the result of the following:

- Image capture tools, such as the camera
- Card creation application, which displays the image
- Limitations in technology, such as differences between how an image looks on the monitor and how it looks after it is printed
- Printer maintenance or PC settings

New Select Class printers include Datacard’s Tru Image™ processing. Cards printed with Tru Image have a different appearance than card printed with earlier Select Class printers.

This section describes possible problems you might observe with the quality of cards you produce with the Express or Select printer. To diagnose and fix card quality problems, find the symptom in the tables that follow. For each possible cause, attempt the solutions listed.

Problem	Troubleshooting
Print quality	Table 6-1 on page 6-2
Topcoat quality—print ribbon	Table 6-2 on page 6-7

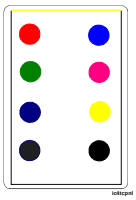
Print station

Table 6-1 and Table 6-2 describe problems that can originate in the print module.

Table 6-1: Print quality problems

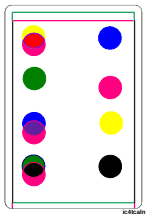
What you see	Possible causes	Solutions
One or more unprinted lines run the entire length of the card. 	The printhead might be dirty or damaged.	Clean the printhead. See Chapter 4. Run a test card. See Chapter 2. If cleaning does not solve the problem, replace the printhead. See Chapter 4.#

Table 6-1: Print quality problems

What you see	Possible causes	Solutions
Part of the printed card is blank. 	Cards might not meet specifications.	Obtain and use a different supply of cards. See Appendix B.
	Cards might be dirty.	Increase the frequency of cleaning. See Chapter 3. Run a cleaning card. See Chapter 4.
	The printhead cartridge might not be installed properly	Remove and reinstall the printhead cartridge. See Chapter 4.#
The leading or trailing edge of the printed card is not the expected color. 	Cards might be slipping in the card track.	Use a printer cleaning card, then clean the rollers. See Chapter 4.
	Two cards might have been picked.	Fan cards before inserting them in the card cartridge.
	The print ribbon might not be Datacard-recommended.	Obtain and use Datacard-recommended print ribbon. See Appendix B.
	The ribbon registration might be incorrect.	Contact your service representative.
No image is printed on the card or the printing in very light. 	The ribbon is loaded incorrectly.	Remove and replace the ribbon. See Chapter 2.
	The printhead cartridge cable might be loose.	Power off the printer. Make sure the printhead cable is securely connected. See Chapter 4.
	The printhead cable or printhead cartridge might be damaged.	Replace the printhead. See Chapter 4.# If the problem persists, contact your service representative.

Obtain guidance from service before performing this task.

Table 6-1: Print quality problems

What you see	Possible causes	Solutions
One color panel is not aligned correctly with other panels. 	Cards might be slipping in the card track.	Use a printer cleaning card, then clean the rollers. See Chapter 4.
	The card registration might be incorrect.	Set the position of printing. See Chapter 5.[#] If the problem persists, contact your service representative.
Printed card images (photos) are blurry Printed cards, including text, are blurry.	The image capture system needs adjustment.	See the information for the image capture system.
	The rollers may be dirty.	Use the printer cleaning card, then clean the rollers. See Chapter 4.
	The cards may not meet specifications.	Obtain and use a different supply of cards. See Appendix B.
	The printhead may be dirty.	Clean the printhead. See Chapter 4.
	The print station needs fine tuning.	If the problem persists, contact your service representative.
All card data is positioned unevenly on the card. 	The card registration might be incorrect.	Set the position of printing. See Chapter 5.[#]
	The print station needs fine tuning.	If the problem persists, contact your service representative.

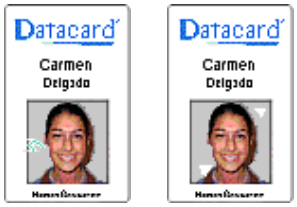
[#] Obtain guidance from service before performing this task.

Table 6-1: Print quality problems

What you see	Possible causes	Solutions
Card is printed upside down (the image is rotated 180 degrees). 	The card creation application has rotated the card.	See the information for the card creation application.
	The card rotation setting might be incorrect.	Set the card rotation using the Default Document Properties (NT) or Properties (98) dialog box. See Chapter 3.
Printed card images (photos) look faded. Printed cards, including text, look faded.	The image capture system needs adjustment.	See the information for the image capture system.
	Print ribbon may have been stored improperly or damaged.	Change the print ribbon and then print a test card. See Chapter 2.
	The printhead intensity setting might need to be changed.	Change the printhead intensity. See Chapter 5.#
	The cards may not meet specifications.	Obtain and use a different supply of cards. See Appendix B.
	The printhead may be dirty.	Clean the printhead. See Chapter 4.
		If the problem persists, contact your service representative.
Part of the printed image is discolored. 	Cards might have fingerprints or other dirt on them.	Handle cards without touching the surface to be printed. Wear gloves when handling unprinted cards.
	The cards might be contaminated or otherwise not meet specifications.	Obtain and use a different supply of cards. See Appendix B.
	The rollers might be dirty.	Use a cleaning card, then clean the rollers. See Chapter 4.
	A signature panel is located on the other side of the card.	Redesign the card to avoid printing photos over signature panel residue.

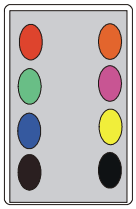
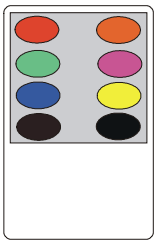
Obtain guidance from service before performing this task.

Table 6-1: Print quality problems

What you see	Possible causes	Solutions
The printed card shows small unprinted spots. 	The card is scratched or the card surface is uneven.	If the problem occurs frequently, obtain and use a different supply of cards. See Appendix B.
	The rollers might be dirty.	Use a cleaning card, then clean the rollers. See Chapter 4.
The printed card shows wavy lines along the length of the card (woodgrain). 	The printhead intensity setting is too high.	Lower the printhead intensity for color (YMC) printing. See Chapter 5.#
	The print ribbon is not loaded correctly.	Load the print ribbon again. Make sure the cartridge is firmly seated. See Chapter 2.
	The printhead is not aligned correctly.	Contact your service representative.
The printed card shows lighter or darker bands across the width. 	The printhead intensity setting is too low.	Increase the printhead intensity setting for color printing. See Chapter 5.#
The card shows irregular lighter or darker spots. 	The print ribbon is wrinkling because the intensity setting is too high.	Lower the printhead intensity setting for color printing. See Chapter 5.#
	The printhead is not aligned correctly.	Contact your service representative.

Obtain guidance from service before performing this task.

Table 6-1: Print quality problems

What you see	Possible causes	Solutions
Part or all of the printed image is expanded. 	The printhead is not installed properly.	Remove and reinstall the printhead cartridge. See Chapter 4.
Part or all of the printed image is compressed. 	The card path may be obstructed.	Check the card transport track for jams. Check the duplex module (S2 printers only) for jams. Clean any card jams.
	The rollers might be dirty.	Use the printer cleaning card, then clean the rollers. See Chapter 4.
	The cards might not meet specifications.	Obtain and use a different supply of cards. See Appendix B.

Topcoat applied using the print ribbon

You might apply topcoat to the card using a T panel as part of the print ribbon.

Table 6-2: Topcoat quality problems—print ribbon

What you see	Possible causes	Solutions
Random scratches appear in the topcoat of the printed card.	The inside of the printer might be dirty.	Run a printer cleaning card and a duplex cleaning card. Clean the rollers. See Chapter 4.
	Supplies were mishandled.	Store supplies in a clean environment. Keep supplies in their packaging until loaded in the cartridge.

Obtain guidance from service before performing this task.

Table 6-2: Topcoat quality problems—print ribbon

What you see	Possible causes	Solutions
The topcoat shows bands across the width of the card. 	The printhead intensity is too low. The printhead is not aligned correctly.	Increase the printhead intensity setting for topcoat. See Chapter 5.# Contact your service representative.
The topcoat shows lines along the length of the card. 	The printhead intensity is too high. The printhead is not aligned correctly.	Lower the printhead intensity setting for topcoat. See Chapter 5.# Contact your service representative.
A short edge of the topcoat does not stick to the card. 	The printhead intensity is too low. The printhead is not aligned correctly.	Increase the printhead intensity setting for topcoat. See Chapter 5.# Contact your service representative.
The card shows irregular lighter or darker spots. 	The topcoat panel of print ribbon is wrinkling because the intensity setting is too high. The printhead is not aligned correctly	Lower the printhead intensity setting for topcoat. See Chapter 5.# Contact your service representative.

Obtain guidance from service before performing this task.

Obtaining service

For repair assistance, contact your service representative. Place the service call from a telephone close to the printer so that you can access the printer and the PC running the driver while talking to the customer support representative.

Before you call for service, make sure you have the information recorded during troubleshooting, as described on page 6-1. Also, make sure you have the serial number of the printer. It is located on a label on the bottom of the printer.

When to obtain service

Perform the steps earlier in this chapter before obtaining service. Call for service if:

- A troubleshooting process instructs you to call service
- A troubleshooting process does not produce the expected result
- You experience a problem repeatedly

Packing the printer for shipping

When service requests that you return the printer to a service center for repair, pack the printer for shipping. You might also need to pack the printer to send it to another location.

Pack the printer

1 Turn off power to the printer.

2 Remove the power cord from the printer and power receptacle. Remove the interface cable and any other cables attached to the printer.

   – If you are shipping the printer to use at another location, pack the power cord, interface cable, and any other cables in the accessories box.

   – If you are shipping the printer for service, do not ship cables with the printer unless asked to do so.

3 Remove all cards from the card cartridge, and card output stacker, and printer. Do not ship cards unless asked to do so.

4 Secure the print ribbon cartridge. Leave the print ribbon cartridge in place or apply packing tape. Avoid applying tape to labels in the printer.

5 Make sure the card cartridge is firmly seated.

6 Close the cover.

7 Use the original shipping carton, plastic bag, and foam shipping supports.

8 Place the foam shipping support in the printer carton.

9 Place the plastic bag around the printer and close it.

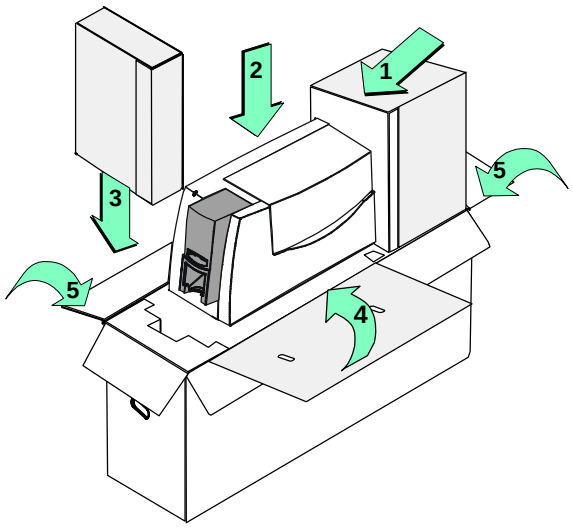


Figure 6-3: Pack an E or S printer for shipping

10 Place the protective box for your printer model:

- For models E and S, place the protective box in the shipping carton with the closed end of the box toward the printer (step 1 in Figure 6-3).
- For model S2, place the open end of the protective box over the end of the printer (step 1 in Figure 6-4).

11 Place the printer in the shipping carton (step 2 in Figure 6-3 or Figure 6-4).

Service might ask you to ship cards or additional samples of your current supplies. If service requests cards or supply samples, place them in an envelope, plastic bag, or in the accessory box to prevent damage to the printer.

12 Place the accessories box along the end of the shipping cushion, near the front of the printer (step 3 in Figure 6-3 or Figure 6-4).

If you are transporting the printer to another location for use, be sure to pack the User's Guide, the interface cable, the power cord, any smart card serial cables, printer driver CD, the warranty, and the declaration of conformity in the accessories box.

13 Fold the top shipping support over the top of the printer (step 4 in Figure 6-3 or Figure 6-4).

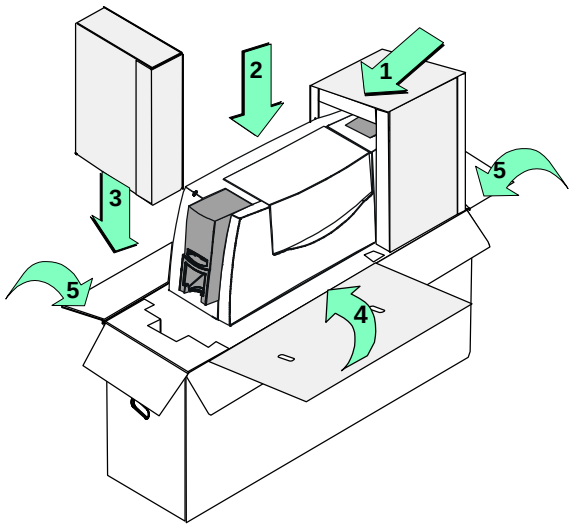


Figure 6-4: Pack an S2 printer for shipping

14 Close the shipping carton (step 5 in Figure 6-3 or Figure 6-4).

15 Secure the carton with shipping tape. Be sure to wrap around the shipping carton several times to secure it.

16 Put a shipping label on the carton. If you are returning the printer for service, use the address provided by service.

17 Ship the carton. If you are returning the printer for service, follow the instructions provided by service to ship the carton to a service center.

Safety and compliance

A

This appendix presents:

- Regulatory compliance information
- Safety information
- Trademark acknowledgments

Regulatory compliance

Notice for USA (FCC notice)

This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with this instruction manual, it may interfere with radio communications. This equipment has been tested and found to be within the limits for Class A computing devices, pursuant to Subpart J of Part 15 of FCC rules, designed to provide reasonable protection against radio interference in a commercial environment. Operation of this equipment in a residential environment may possibly cause interference. In the event of interference, the user, at their own expense, will be required to take whatever measures are necessary to correct the problem.

Notice for Canada (CSA)

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Notice for Europe

We hereby certify that the Datacard® Express™ or Select™ Class photo ID printer complies with EMC Directive 89/336/EEC.This printer conforms to Class A of EN 55022. Operation of this equipment in a residential environment may possibly cause interference. In the event of interference, the user, at their own expense, will be required to take whatever measures are necessary to correct the problem.

Notice to Users of Printers Equipped with Contactless Smart Card Coupler

The contactless smart card coupler emits radio-frequency waves and must be used as installed and recommended by Datacard, the printer manufacturer. You may not modify the coupler or how it is used without the written permission of Datacard. You may not operate the printer after modifying the coupler or its method of operation.

Liability statement

This Datacard™ product has been built to the high standards of Datacard Corporation (doing business as Datacard™ Group). Please note and heed the WARNING and CAUTION labels that have been placed on the equipment for your safety. Please do not attempt to operate or repair this equipment without adequate training. Any use, operation or repair in contravention of this document is at your own risk. By acceptance of this system you hereby assume all liability consequent to your use or misuse of this equipment. Datacard Corporation assumes no liability for incidental, special or consequential damage of any kind. Equipment specifications, applications and options are subject to change at the sole discretion of Datacard Corporation without notice.

Safety

All Datacard™ products are built to strict safety and reliability specifications in accordance with UL1950 and CSA requirements, therefore, safety issues pertaining to operation and repair of Datacard™ equipment are primarily environmental and human interface.

The following basic safety tips are given to ensure safe installation, operation and maintenance of Datacard™ equipment and are not to be considered as comprehensive on all matters of safety.

Safe environment

- Connect equipment to a grounded facility power source. Do not defeat or bypass the ground lead.
- Place the equipment on a stable surface (table) and ensure floors in work area are dry and non-slip. Insulated rubber floor mats are preferred.
- Know the location of equipment branch circuit interrupters or circuit breakers and how to turn them on and off in case of emergency.
- Know the location of fire extinguishers and how to use them. ABC type extinguishers may be used on electrical fires.
- Know local procedures for first aid and emergency assistance at the customer facility.
- Use adequate lighting at the equipment.
- Maintain the recommended range of temperature and humidity in equipment area.

Safe human interface

- Use proper lifting techniques when moving or installing the equipment.
- Use standard electrostatic discharge (ESD) precautions when working on or near electrical circuits.
- Do not defeat or disconnect safety interlocks on covers. Operate the printer with the cover closed.

Acknowledgments

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All other trademarks are the property of their respective owners.

Supplies and cards

B

This appendix describes specifications, part numbers, and handling for:

- Personalization supplies, including print ribbons
- Cards to print
- Cleaning supplies, including cleaning cards
- Printer driver diskettes
- Printer components, including cables, additional supply cartridges, and the replaceable printhead cartridge

Personalization supplies

Print ribbon is used to personalize cards. This section describes Datacard®-recommended personalization supplies for the Express™ or Select™ printer and how to store them.

Use Datacard-recommended supplies in the Express or Select printer.

Print ribbons

You can use the following print ribbons in ImageCard printers:

Ribbon type	Part number	Panel description	Colors	One panel set prints:
YMC	806124-101	Three colors	Full-color	Front side of card
YMCK	806124-102	Three colors and true black	Full-color	One side of card OR front–three colors; back–true black
YMCKT	806124-104	Three colors, true black, and topcoat	Full-color	One side of card OR front–three colors; back–true black & topcoat
YMCT	806124-105	Three colors and topcoat	Full-color	One side of card
YMCKTKT	806124-106	Three colors, true black, topcoat, true black, and topcoat	Full-color and true black	Front–three colors, true black & topcoat back–true black & topcoat

You can use the following single-color (monochrome) print ribbons in ImageCard and UltraGrafix printers:

Ribbon type	Part number	Panel description	Colors	One panel set prints:
KT	806124-109	True black and topcoat	Black	One side of card
K black	596230-001	Continuous black	Black	Not applicable

Ribbon type	Part number	Panel description	Colors	One panel set prints:
K dark blue	596230-002	Continuous dark blue	Blue	Not applicable
K white #	596230-003	Continuous white	White	Not applicable
K red	596230-004	Continuous red	Red	Not applicable
K green	596230-006	Continuous green	Green	Not applicable
K silver	596230-007	Continuous silver	Silver	Not applicable
K scratch-off	548237-001	Continuous scratch-off panel	Scratch-off	Not applicable

#. Print ribbon is larger than printer capacity. Remove 7 yards (6.5 m) of ribbon before loading this roll in the printer.

When you use a monochrome print ribbon, use a printhead designed for optimal monochrome printing. See “Printhead cartridge” on page B-7 for more information.

If you change the type of ribbon you use, be sure to make the appropriate changes to the Express or Select printer driver. See “Changing the type of print ribbon” on page 5-11

Supply roll storage

Follow these guidelines when storing supply rolls:

- The print ribbon maintains its quality for about a year. For optimal card quality, purchase and store quantities that you can use up in less than a year.
- The print ribbon and card stock might require secure storage and tracking. Follow your policy for storing and tracking the supplies used to make cards.
- Select a location away from direct sunlight, with a temperature between 55° F and 80° F or between 13° C and 27° C. A humidity range from 20% to 80% (non-condensing) is recommended.
- Supply rolls should be at room temperature when they are installed in the printer and used. If supplies are stored in a cooler environment than the printer, allow supplies to reach room temperature before using.

Cards

This section describes specifications and quality guidelines for card stock to use with the Express or Select printer. It also describes the environmental specifications for storage of card stock.

Card specifications

For best results with the Express or Select printer, use high-quality card stock that meets the specifications and recommendations described in this section.

Card size

Use CR-80 size cards with the following nominal dimensions:

Length	3.37 inches	85.60 mm
Width	2.125 inches	53.98 mm
Thickness with smart card chip	0.020 to 0.030 inches	0.500 to 0.760 mm
Thickness (all other cards)	0.020 to 0.050 inches	0.500 to 1.27 mm

Actual card thickness can vary by up to ten percent from the sizes listed. Smart card chips can be raised slightly from the printing surface.

Card bow must be less than the thickness of the card.

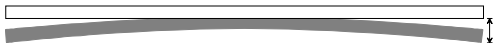


Figure B-1: Excessive card bow

Card material

Use cards made of the following types of material:

- Glossy PVC surface, either 100% PVC cards or composite cards with a PVC surface.
- Cards with a magnetic stripe on one side of the card.
- Cards with a smart card chip on the top of the card. Depending on the module installed in the printer, contact-type, contactless, or both types of smart card chips can be programmed.

Embossed cards cannot be printed with the Express or Select printer.

New cards preferred

The Express or Select printer is designed to print on new card stock. If you print on cards twice, be careful to avoid getting dirt, fingerprints, or other contamination on cards before the second printing. Printing on cards that have been issued might introduce substances that interfere with card printing or damage the printer. See “Problems with card appearance” on page 6-2 to address card appearance problems with pre-printed cards.

Pre-punched cards

You can use prepunched cards with the Express or Select printer. Figure B-2 shows where punched areas are not allowed.

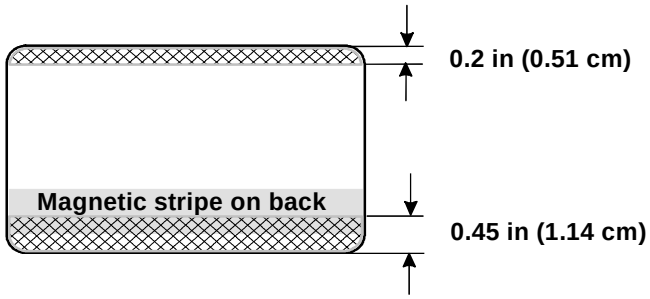


Figure B-2: Pre-punched card block-out areas

The dimensions show how far from the edge any punched areas must be (dimensions include any tolerance):

- The cards cannot have a punched area closer than 0.2 in (0.51 cm) from the left-hand edge (as loaded in the card cartridge).
- The cards cannot have a punched area closer than 0.45 in (1.14 cm) from the right edge (as loaded in the card cartridge).
- If the card has a magnetic stripe, the card cannot be punched anywhere in the stripe.

Card quality guidelines

Your cards must meet the following card quality guidelines for the Express or Select printer to print high quality graphics on them successfully.

Card surface

- The card surface must be free of irregularities such as particles embedded in the surface.
- The card surface must be smooth and even. Surface irregularities can cause loss of contact, resulting in printing voids.
- The printing surface must be glossy. It cannot have a matte finish (see other sections in this appendix for more information).

Card handling

These guidelines apply to unprinted cards. Any debris or particles on an unprinted card's surface can reduce print quality and damage the printhead. Grease or oils, such as oils from your fingers, also reduce print quality.

- Keep cards completely clean.
- Do not touch the print surface of a card with your fingers or hands.
- Do not use a rubber band to bind blank cards together.

- If you drop a card on the floor, do not insert it into the Express or Select printer.

Card storage

These guidelines apply to both printed and unprinted cards.

- Cards must be stacked so that they will not shift and rub against each other.
- When storing cards, make sure that no two cards contain images or blocks of color that will come in contact with each other.
- Make sure that the magnetic stripe on one card does not come in contact with the magnetic stripe on another card.
- Make sure that cards with magnetic stripes are stored away from magnets and other magnetic objects.

Card storage specifications

The cards should be stored in a cool, dry, and dark place. Excessive light can cause yellowing of cards on exposed edges. Keep cards in their original packaging.

Cards should be at room temperature when they are installed in the printer and used. If cards are stored in a cooler environment than the printer, allow them to reach room temperature before using.

Cleaning supplies

The Express or Select printer uses the following cleaning supplies.

- Printer cleaning cards
- Magnetic stripe cleaning card
- Duplex cleaning cards
- Citrus solvent

Printer cleaning card

Use a printer cleaning card to remove particles left by printing supplies inside the Express or Select printer. Use a printer cleaning card after every 5 to 100 cards. You can set this interval. See “Working with printer settings and data” on page 3-1.

Printer cleaning cards are sold in packages of 10. The package part number is 557297-001.

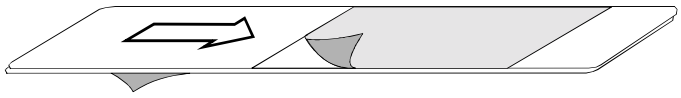


Figure B-3: Printer cleaning card

If the printer does not have a magnetic stripe module, you can use cleaning card part number 548714-001.

Duplex cleaning card

Use the duplex cleaning card if the printer has automatic two-sided printing. The duplex cleaning card is part number 557668-001.

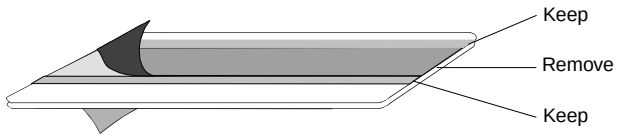


Figure B-4: Duplex cleaning card

Magnetic stripe cleaning card

Use the magnetic stripe cleaning card if the printer has a magnetic stripe module. The card is part number 590408-002.

Figure B-5: Magnetic stripe cleaning card

Citrus solvent

Use T960 citrus solvent to clean rollers inside the printer. The solvent is part number TUL003-007.

Printer driver diskettes

The Express or Select printer drivers are updated from time to time to provide optimal functionality. You can obtain the most recent printer driver for the PC operating system you use from the Datacard Web site at www.datacard.com. You also can request the newest release of the printer driver on diskette. The part number changes with each release.

Anti-static wrist strap

When you change the printhead cartridge, you need to use an anti-static wrist strap, also called an ESD strap. You can order an anti-static wrist strap, part number 805768-001, from Datacard or obtain one from any electronics store.

Printer components

The Express or Select printer has a replaceable printhead. In addition, you can order additional or replacement parts for the printer. This section describes the printer parts you can order.

Printhead cartridge

The Express or Select printer has a replaceable printhead. The printhead is subject to wear and has a direct impact on print quality.

Select the printhead to order based on the printer series.The following printheads are available.

Printer series	Printhead type	Printhead type label	Part number
ImageCard	Full color	Three colors	547675-999
UltraGrafix	Monochrome	All black	547674-999

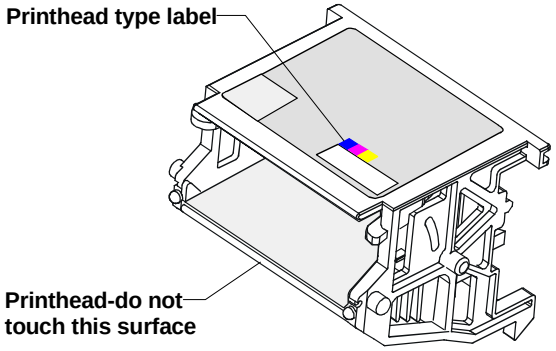


Figure B-6: Express or Select replaceable printhead cartridge

⚠ Do not touch the printing edge of the printhead in the printhead cartridge. If you do, clean it. See “Cleaning the printhead” on page 4-7.

Keep a replacement printhead in stock so it is available when you need it.

Interface cable

The Express or Select printer uses an interface cable (part number 806797-001) to connect the port on the printer to the ECP parallel port on the PC.

ⓘ The interface cable must be a shielded, Type C, IEEE 1284 parallel port cable, up to 2 meters long, maximum, with a proprietary ferrite bead.

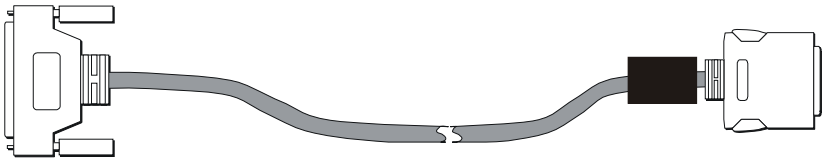


Figure B-7: Interface cable

Power cord

The Express or Select printer uses one of the following power cords:

- U.S. power cable (part number 556766-010)

Figure B-8: U.S. power cable

- European power cable (part number 806842-001)
- Australian power cable (part number 806842-002)
- United Kingdom power cable (part number 806842-003)
- Danish power cable (part number 806842-004)
- Indian power cable (part number 806842-005)
- Israeli power cable (part number 806842-006)
- Italian power cable (part number 806842-007)
- Swiss power cable (part number 806842-008)
- Japanese power cable (part number 806842-009)

Smart card serial cable

If the Express or Select printer has one or more smart card modules, it uses the smart card serial cable to connect the smart card port and the PC. The smart card serial cable is part number 805815-001.

The smart card serial cable must be a shielded DB9 serial cable, up to 3 meters long maximum.

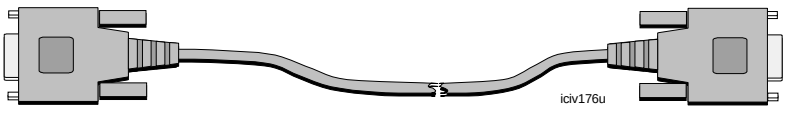


Figure B-9: Smart card serial cable

Print ribbon cartridge

The print ribbon cartridge is part number 555545-999.

Be sure to change the print ribbon setting in the printer driver when you change the type of print ribbon.

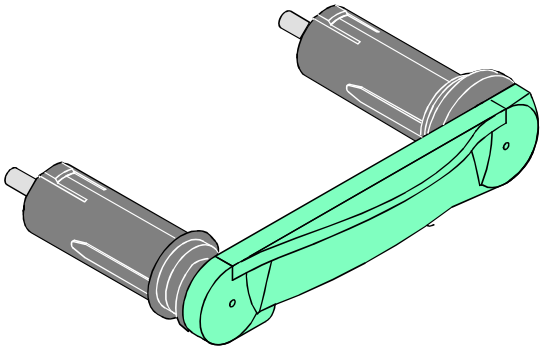


Figure B-10: Print ribbon cartridge

Card cartridge

The card cartridge is different from Express and Select printers.

- Express printers have green cartridges, which are part number 555540-998.
- Select printers have gray cartridges which are part number 555540-997

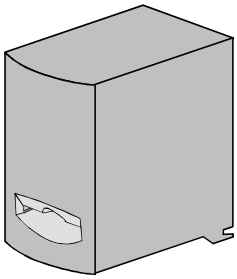


Figure B-11: Card cartridge

Fuse

The fuse, located in the power receptacle, is part number 804960-017.

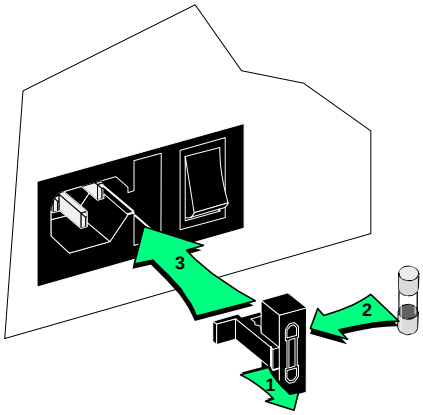


Figure B-12: Power receptacle fuse

The power receptacle fuse is a 2.5 ampere slow blow fuse.

PC settings

C

This appendix provides information about the PC on which the Express or Select printer driver is installed. It describes:

- Configuring the ECP parallel port
- Setting port values
- Setting printer permissions (Windows NT only)
- Configuring the optional smart card serial port

This appendix includes a section for settings that are handled the same way in all operating systems and also includes sections for each PC operating system supported by the printer driver.

PC settings for all operating systems

This section describes how to configure the ECP parallel port.

Configuring the ECP parallel port

For most PCs, the parallel port is configured as an ECP parallel port in the PC's BIOS. See the information that accompanies your PC for details about changing the BIOS settings. The following applies to most PCs and to the Windows NT and Windows 98 operating systems.

Configure the ECP parallel port

1 Close all open applications.

2 Reboot the PC.

3 Enter Setup and follow the instructions that display early in the reboot sequence. The setup screen will appear.

4 In Setup, check to see that the Parallel Port Mode field is set to ECP. If it is not, set it to ECP.

ℹ If the PC has more than one parallel port, make sure you check the setting for the parallel port to which the printer is attached (LPT1 or LPT2).

ℹ An ECP port is required for the printer to operate at its maximum processing speed. The printer will operate in compatible or IBM AT mode; however, the printer might not operate as fast.

5 Save the setting and exit Setup, following the instructions in the setup screen.

Continue with the “Set port values” procedure for your operating system.

♦

Setting up two ECP parallel ports

1 Follow the instructions provided with the port to install it and set the jumpers. Record the jumper settings.

The jumper settings must match the settings you choose in the Resources tab.

2 Right-click on the My Computer icon on the desktop and then select Properties from the popup menu. The System Properties dialog box appears.

3 Select the Device Manager tab to view a list of devices.

4 Select “View devices by type” if needed.

5 Click the + next to Ports (COM and LPT) to display the port entries. Usually the second installed port is LPT2.

6 Click Printer Port (LPT2), or other entry for the installed port, and then select the Properties button. The Printer Port (LPT2) Properties dialog box appears.

7 Click the Resources tab.

- Make sure that “Use automatic settings” is not selected.
- The “Conflicting device list” should show No conflicts.
- If you are using a DMA channel for the second printer, the Resources settings list should show Direct Memory Access and its channel setting.

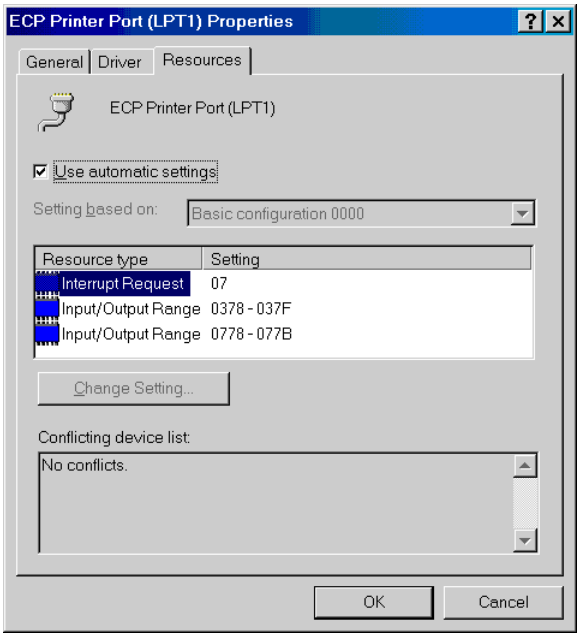


Figure C-1: Printer Port (LPT) Properties dialog box

If the Resources tab shows conflicts, select another configuration or change the settings for the port, following port instructions.

8 Click OK on the Printer Port (LPT2) Properties dialog box and on the System Properties dialog box to save settings and close the dialog boxes.

If you install the second parallel port and receive Windows errors, or if the printer does not print reliably (without displaying errors), the port might have an unresolved hardware conflict. Contact the port manufacturer or the PC manufacturer for assistance.

♦

PC settings for Windows NT 4.0

This section describes the following settings for PCs running Windows NT 4.0.

- Setting port values
- Setting printer permissions
- Setting serial port values

Setting port values

Port values include the port to which the printer is assigned, the communication mode for the port, and printer spooling.

Set port values for Windows NT 4.0

1 From the Windows NT taskbar select Start, then Settings, and then Printers. The Printers window appears.

2 Highlight the Express or Select printer driver icon by clicking on it once.

3 From the menu bar, select File and then Properties. The Properties window for the Express or Select printer driver appears.

4 Select the Ports tab.

5 Make sure the correct port (usually LPT1) is selected in the Port list. “Express or Select“ should appear in the Printer column for the checked port.

6 Make sure that Enable Bidirectional Support is checked.

7 Select OK to save the settings and close the Properties window.

8 Close the Printers window.

9 If you change the port to which the PC prints, power off the printer, shut down the PC, and restart both of them before printing cards.

♦

Setting printer permissions

If the PC to which the printer is attached has other users, set permissions that:

- Allow users to use all features of the printer and driver, including messages. (Messages inform users when they need to change the ribbon, load cards, and fix problems.)
- Prevent any access to the printer by unauthorized users.

Set printer permissions

1 From the Windows NT taskbar select Start, then Settings, and then Printers. The Printers window appears.

2 Highlight the Express or Select printer driver icon by clicking on it once.

3 From the menu bar, select File and then Properties. The Properties window for the Express or Select printer appears.

4 Select the Security tab.

5 Click the Permissions button to open the Printer Permissions dialog box.

6 Select the Add button to open the Add Users and Groups dialog box.

7 Select the Show Users button.

8 Select the name of the user (or group) to add to the printer and click the Add button.

9 From the Type of Access list, select the access:

   – For a user of the Express or Select printer on the PC connected to the printer, select Full Control. The user will be able to see all messages. The user will also be able to perform other actions, such as deleting the printer driver.

   – For a user who accesses the printer over a network, select Print.

10 Select OK to save the change and close the Add Users and Groups window.

11 Repeat steps 6 through 10 to add other users or groups.

12 Select OK to save the changes and close the Printer Permissions window.

13 Select OK to close the Properties dialog box.

♦

Setting a smart card serial port—Windows NT

If you use a smart card application, you connect the PC to the serial port on the Express or Select printer. The PC should be set to match the printer serial port settings. This section describes how to set the PC serial port in the Windows NT 4.0 operating system. These settings apply to ports for both a contact smart card module and a contactless smart card module. If you use a contact station with the printer, see the information for the contact station for port settings.

Set the serial port on Windows NT

1 From the Start menu, select Settings and then Control Panel.

2 From the Control Panel, select Ports.

3 From the Ports dialog box, select the port, such as COM1 or COM2 (Figure C-2).

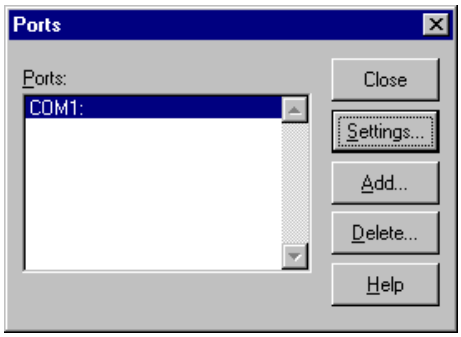


Figure C-2: Ports dialog box

4 Select the Settings button to display the port settings.

If the PC has more than one serial port, make sure you view the settings for the serial port to which the printer is attached.

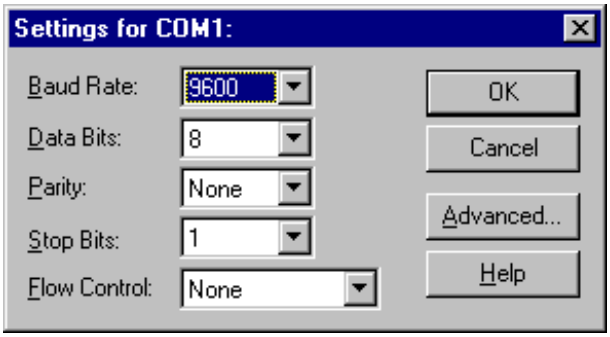


Figure C-3: Settings dialog box

5 Select the following settings:

Setting	Value
Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

6 When the settings are correct, click OK to save settings and close the dialog box.

♦

PC settings for Windows 98

This section describes the following settings for PCs running Windows 98.

- Setting port values
- Setting serial port values

Setting port values

Port values include the port to which the printer is assigned, the communication mode for the port, and printer spooling.

Verify port assignment and settings

1 From the Windows taskbar select Start, then Settings, and then Printers. The Printers window appears.

2 Highlight the Express or Select printer driver icon by clicking on it once.

3 From the menu bar, select File and then Properties. The Properties window for the Express or Select printer driver appears.

4 Select the Details tab and view the port in the Print to the Following Port list.

Make sure this is the ECP parallel port.

⚠ If you need to move the printer to another port, delete the existing printer driver and install the printer to the correct port. See “Network printing” on page 5-6 for steps to follow.

5 Click Spool Settings to display the Spool Settings dialog.

6 Make sure that Enable Bidirectional Support is checked. Also make sure that Spool Print Jobs so Program Finishes Printing Faster is checked.

7 Select OK to save the settings and close the Spool Settings dialog.

8 Select OK to save the settings and close the Properties dialog box.

9 Close the Printers window.

♦

Verify communication mode

1 From the Windows taskbar select Start, then Settings, and then Control Panel. The Control Panel window appears.

2 Double-click the System icon. The System Properties dialog box appears.

3 Select the Device Manager tab.

4 Make sure View Devices by Type is selected.

5 Click the Plus sign + next to Ports (COM & LPT) to show the available ports. The list should include an entry such as "ECP Printer port (LPT1)."

6 Click the entry for the port to which the printer is assigned (such as LPT1 or LPT2).

7 Select the Properties button to display the Properties dialog box.

8 Select the Driver tab, and then select the Update Driver button to display the Select Device dialog box.

9 Make sure Show all devices is selected.

10 In the Manufacturers list, select (Standard port types). In the Models list, select ECP Printer Port, if available.

11 Select OK or Close on each window to select the choice and close the window. If the Version Conflict dialog box appears, select Yes to keep the existing version.

12 Select OK to close the System dialog box and make the changes take effect.

♦

Setting a smart card serial port—Windows 98

If you use a smart card application, you connect the PC to the serial port on the Express or Select printer. The PC should be set to match the printer serial port settings. This section describes how to set the PC serial port. These settings apply to both a contact smart card module and a contactless smart card module.

Set the serial port on Windows 98

1 From the Start menu, select Settings and then Control Panel.

2 From the control panel, select System.

3 On the system Properties dialog box, select the Device Manager tab.

Figure C-4: Device Manager tab of System Properties dialog box

4 Click the Plus sign + next to Ports (COM & LPT) to display a list of ports.

5 From the Ports list, select the port, such as COM1 or COM2 (Figure C-4).

6 Select the Properties button to display the port settings.

If the PC has more than one serial port, make sure you view the settings for the serial port to which the printer is attached.

Figure C-5: Settings dialog box

7 Select the Port Settings tab.

8 Select the following settings:

Setting	Value
Bits per second	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

9 When the settings are correct, click OK to save settings and close the dialog box.

♦

Magnetic stripe encoding

D

This appendix describes the characters you can encode on a magnetic stripe in the Express or Select printer. It includes:

- IATA, ABA, and TTS character sets
- NTT character sets

This appendix also describes the specifications for each track.

To use custom magnetic stripe formats, such as binary or triple IATA, your application must use the SmartDriver SDK. Contact your service provider for more information.

IATA, ABA, and TTS character sets

The IAT encoding format selection for the Express or Select printer encodes IATA data on track 1, ABA data on track 2, and TTS data on track 3.

IATA (International Air Transport Association)

The maximum field length for IATA format is 76 characters. IATA allows spaces, upper case alphabetic characters, numeric characters, and the following special characters:

! # $ % ' ( ) * + , - . / ; : < @ > = ^] \ [" & _

ABA (American Bankers Association)

The maximum field length for ABA format is 37 characters. ABA allows numeric characters and the following special characters:

: ; < = >

TTS (Thrift Third Standard)

The maximum field length for TTS format is 104 characters. TTS allows numeric characters and the following special characters:

: ; < = >

NTT character set

The maximum field length for NTT (Nippon Telephone & Telegraph) format is 69 characters. NTT allows spaces, numeric characters, upper case alphabetic characters, lower case alphabetic characters, and special characters. From a PC running Japanese Windows NT 4.0 or Japanese Windows 98, NTT supports 55 Katakana characters.

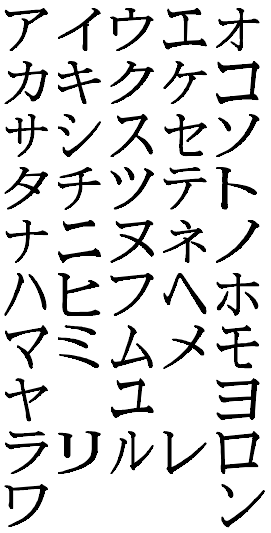
The special characters include:

! " # $ % & ' ( ) * + , - . / : ; < = > ? @ [ ] ^ _ ` { | } ~

and the following Japanese-language special characters: (Japanese Windows NT required.)

。 『 』 、 ・ ー ゛ ゜

The 55 Katakana characters include the following 45 Katakana characters:



and the following 10 Katakana characters:

ヲァィゥェォャュョッ

Each time you start using Japanese-language characters, or stop using them, the driver adds a hidden character. Each hidden character reduces, by one, the number of characters you can encode.

Magnetic Stripe settings used by the Express or Select printer

The following table presents technical details that apply to encoding magnetic stripe data.

	IATA	ABA	TTS	NTT	Binary
Character Differential	32	48	48	0	0
Start Sentinel (SS) (ASCII character)	% (37)	; (59)	; (59)	127	None
End Sentinel (ES) (ASCII character)	? (63)	? (63)	? (63)	127	None
Lowest ASCII Character	space (32)	0 (48)	0 (48)	(1)	0
Highest ASCII Character	_ (95)	? (63)	? (63)	(126)	255
Character-level parity (VRC)	Odd	Odd	Odd	Even	None
Cumulative parity (LRC)	Even	Even	Even	Even	None
Density in bits per inch	210	75	210	210	210
Data bits per character	6	4	4	7	8
Maximum number of encodable characters (not including start and end sentinel or LRC)	76	37	104	69	33
Encoding direction	SS first	SS first	SS first	SS last	SS first
Start sentinel adjustment	310	320	310	310	310

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